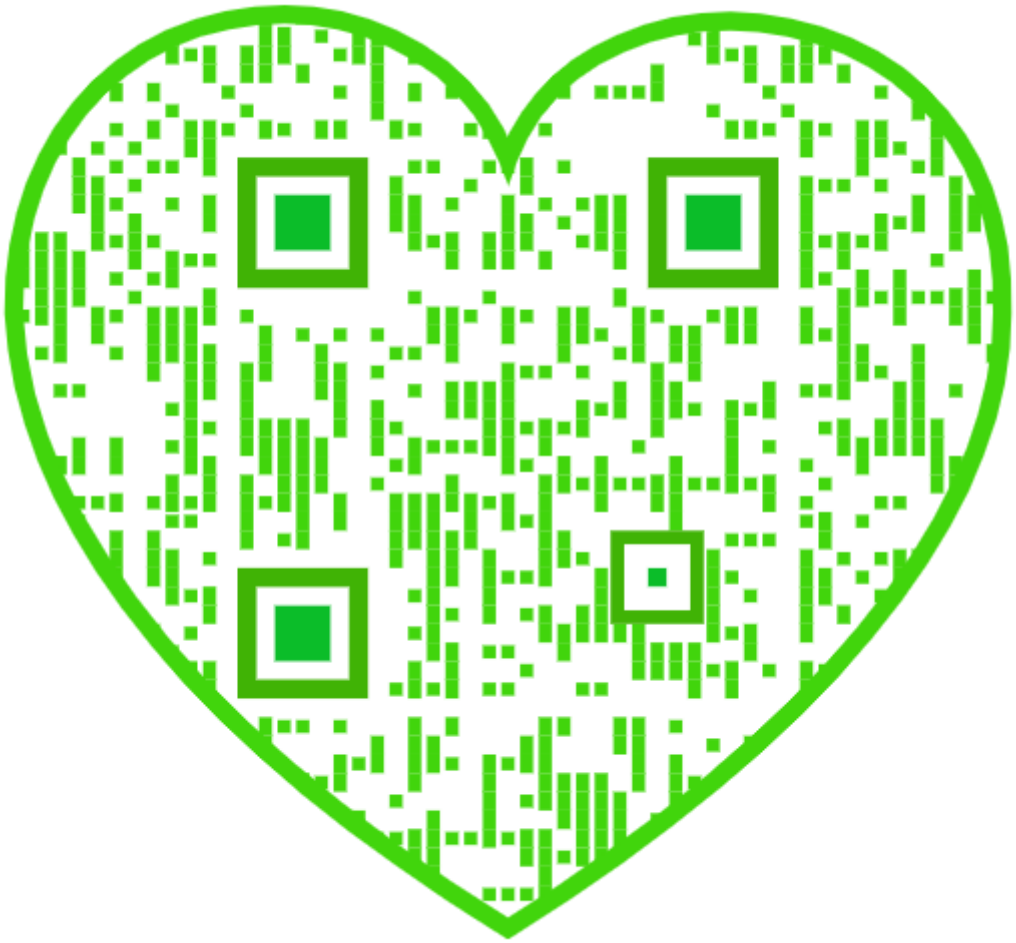


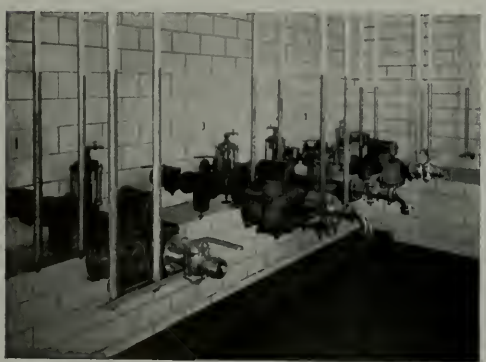
ARCHITECT AND ENGINEER

APRIL 1942

America's newest streamlined bottling plant shows

HOW KRAFTILE LICKS TODAY'S "BUILDING

Government Cellar contains four 100-barrel and eleven 250-barrel glass lined tanks. The Wall Units are Kraftile Ceramic Glazed. Cellular, they are ideal for a refrigerated room like this. Kraftile Vitreous 8 x 8 Quarry Tile is used to finish the floor here, in the Meter Room, and the entire working area of Machinery Hall. 13,300 square feet were used—the largest quarry tile installation in San Francisco last year



11,340 square feet of Kraftile Wall Units helped Acme Breweries SAVE on steel. CUT labor time. SLASH maintenance costs

WHAT CAN private industrial construction do these days? There's a good answer in Acme Breweries' new $750,000 five-story bottle house.

Kraftile Structural Wall Units, Acme found, are a "natural" for modern design — a solution to major building problems, too. For example . . .

For many partitions, Acme used Kraftile Wall Units in place of steel stud construction. Tests prove these wall units have 10 times the state-required seismic resistance. High-fired, they stand up under the hardest abuse. They resist fire, water, decay and termite destruction.

Above: **Employees' Locker Room** (before locker installation). Partitions for personnel rooms and offices, employees' dressing rooms and lunch room are 6" x 12" Kraftile "Salt-Glazed" Structural Units, 4" thick with vertical cellular construction reinforced with cement grout where necessary. Partitions are glazed from floor to ceiling

Left: **Government Meter Room** is done in Kraftile Ceramic Glazed Wall Units (unsized). These triple-glazed surfaces are available in a variety of colors—bright, mat or mottled. Colors used here are Monterey Buff with Tuolomme Green feature strip. Note also Kraftile Quarry Tile which is used on the floor

ARCHITECT AND ENGINEER

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A SMALL HOME THAT MEETS WARTIME RESTRICTIONS

House for Mrs. Mory Stone, Altadena
William J. Stone, Architect

This modern small home in Altadena is typical of many all-gas houses built in recent months in Southern California at costs averaging between $4500 and $5000. William J. Stone is the architect.

Built as a home to be enjoyed by Mrs. Stone and her daughter, one of the attractive construction details is the sun porch which leads off from the master bedroom. It provides an outdoor sitting room with an inspiring view across a well landscaped yard to the Arroyo Seco.

Of modified Colonial style, showing restrained streamlining technique, the interior of the house is a clever adaptation of modern treatment accented by old favorite ideas. The distinctive fireplace provides a central motif in the living room for furniture groupings. Ease and accessibility characterize the kitchen, which embodies a streamlined arrangement with semi-indirect lighting effects.

The house, with its compact floor plan, is easily and quickly heated with a gas floor furnace. A gas automatic storage water heater provides abundant hot water. In the kitchen, a modern "CP" gas range and silent Electrolux gas refrigerator round out a modern scheme of convenience and economy.

Dining room from entrance hall and living room

All gas streamlined kitchen

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We believe that if you will make a brief analysis of these features, and their contribution to flush valve service, you, too, will join the growing swing to Watrous.

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Model 8D5

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RUNNING FIRE — By MARK DANIELS, A. I. A.

• *A NEW C. D. AUXILIARY*

At a meeting of Licensed Dogs we agreed that the time for us to take a paw in this muddle is here. Those who know so much and understand so little have been barking up the wrong tree, until we dogs concluded that it is up to us to segregate the cats from the dogs. Hereafter it is a dog's life for everyone.

In the light of the foregoing I, the President of the Mastiff Pack, and chairdog of Lamp Post Wardens, have issued the following preliminary instruction for the guidance of all who leap and bark.

Orders:

1. At the first sound of the siren every dog at his lamp post. (This does not include Pomeranians, Pugs, and Poodles.)

2. No barking after the first signal. A low growl for self protection is permitted. Whines and whimpers, as usual, are out at all times.

3. Scotties and Doxies will take station at the front door until the all clear is barked.

4. Tail wagging is permitted,—if you have one.

5. Don't chase every pair of lights you see in the dark. It may not be a cat's eyes.

6. No howling under any circumstances, even if the moon is up and full.

7. Watch for these bulletins.

McARTHUR MASTIFF,
Chairdog.

• *ANONYMOUS*

Dear Miss or Mrs. Anonymous of Marin County:

I address you as Miss or Mrs., not only because your note has a feminine ring but because men so seldom write anonymous letters.

No, the item in last month's "Running Fire" anent a bomb falling on a howling dog really was not funny. As a matter of fact, it was not intended to be funny but was merely a howl of my own, forced out by many sleepless nights during the past year. Haven't you yourself suffered annoyance and disturbance until you were ready to scream? In a way your comment was a bit paradoxical, for if a dog howls only when he is in pain might it not be humane to end his suffering? Of course, it is out of the question to bomb the dog's owner even though it may be the owner's fault that the dog howls.

• *FED UP!*

We have all heard recently over the radio and in private conversations the statement that many people are getting a little bit fed up on this hue and cry that the American people are not doing anything or, at least, very little to help out soldiers who are fighting our battles for us. I, too, am getting a little fed up on that.

Thousands of people are sacrificing in every way they can to contribute to the success and comfort of our soldiers. The records of the Post Office Department will show that thousands of pounds, possibly tons, have been shipped to soldiers and sailors in this country and abroad. Many of us have suffered an almost entire loss of business and yet we are paying cheerfully and gladly taxes that keep our war machine running although many are forced to sell personal belongings to do so. There are more than a million men in this United States who are beyond the age limit of actual army service; yet, they are in perfectly good health and physical condition. Circumstances have made it all but impossible for a great proportion of them to earn a living; yet, they are contributing all in their power. Further, it should be realized that he also serves who only stands and waits.

• *STEEL*

Uncle Sam needs steel with which to build battleships, bombers and tanks. He might pick up a few hundred tons from the roof of the San Francisco Association for the Blind building at Seventh and Howard Streets. A heavy steel frame was erected years ago for an additional story which was never built. You can see the exposed steel from the street. It is apparently quite useless where it is. Certainly has no structural value.

• *MORE FOOD*

Also there is food for thought in the growing consciousness, and sometimes chagrin, amongst many of us who have begun to realize that our criticisms of the work of the War Department were based largely on our own ignorance. As a matter of fact, the accomplishment of the War Department since December 7, 1941, has been stupendous. The principal cause for criticisms has been our own utter ignorance of what must be and is being done. One minor example that I personally know about was the accomplishment of the Engineer Corps who were confronted with getting nine million dollars worth of work started as quickly as possible and who had the hammer and the saws singing fifteen hours after they had been given instructions to proceed. That is an accomplishment that we architects and engineers have seldom, if ever, seen done. Imagine getting actual physical work started in fifteen hours on a nine million dollar project! But the Engineer Corps did it and still there are those who say that the work is being bungled. I hope every mature person in the United States makes careful note of General McArthur's statement that criticisms are welcome and needed but that if we who criticize would investigate and learn the facts, there would be less criticism.

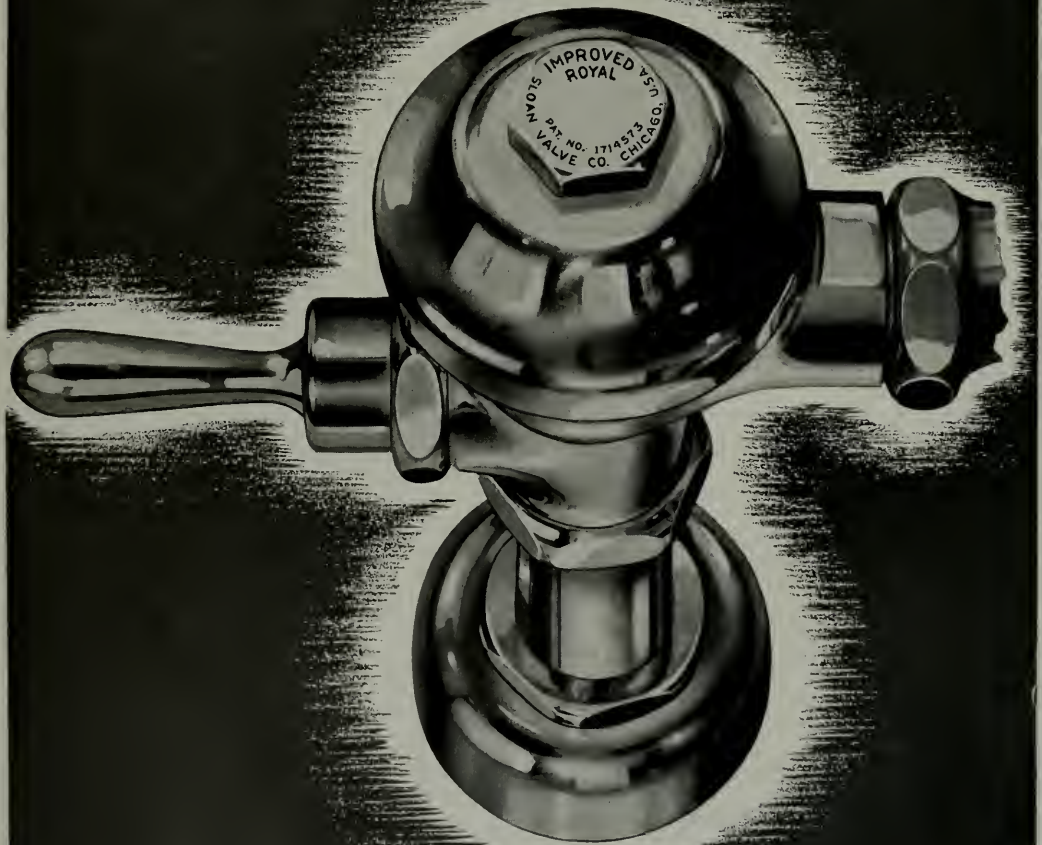
• *HOIST BY HIS OWN PETARD*

More and more announcements of the closing of some architect's office are received daily. Many architects who were well known, some of them nationally, have gone to work for large corporations. This may all have a very salutary effect on the profession in general, for we were drifting toward a superiority complex.

A very short while ago it was not at all uncommon to meet an architect who really perhaps unconsciously, believed that he was a superior sort of animal, who dressed better, spoke better, and knew more about culture and the arts than most people did. He wore his clothes better, he posed more and spoke better English even though he could not always write it. He patronized laymen and fraternized with his contemporaries.

(Turn to Page 55)

IN WAR AS IN PEACE—



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The pre-eminence of the Sloan Valve Company, founded in times of peace, has earned for us the tremendous responsibility of meeting the demands of war-time production for the vast majority of all of America's defense arsenals. Today, as always, the Sloan Valve Company is producing more Flush Valves than all other makers combined.

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NEWS AND COMMENT ON ART

ARCHITECTURE AT THE SAN FRANCISCO MUSEUM

During April and May architecture figures twice in the galleries of the San Francisco Museum of Art (see Calendar below).

1—WESTERN LIVING—A showing of five modern houses costing under $7,500 by the following architects: Hervey Parke Clark, John Ekin Dinwiddie and Albert Henry Hill, William Wilson Wurster, San Francisco; Harwell Hamilton Harris and Richard Neutra, Los Angeles. Mr. Clark has the following to say regarding the exhibition:

"Good planning is good defense. Good planning is good offense. Good planning, in other words, has military value. Just as a well planned house adds to the comfort, convenience and cultural development of its occupants, so a well planned airdrome functions with precision and does not offer as a target a densely grouped line of hangars as at Pearl Harbor. Our exhibition, besides showing the houses, has a two-fold objective: first, to demonstrate that good planning is vital in wartime, and second to reaffirm by example our avowed American principle of a free democratic way of life. If the exhibition makes it clear that, important as they are, houses are only one item of the whole environment which has to be well planned, then it has served its purpose.

"The important fact to realize, of course, is that all parts of our living pattern must be just as well designed; the house, the street, the neighborhood, the town, the region, and finally the country. Of the many components of regional planning, such as housing, recreation areas, good working surroundings, well arranged utilities and so on, the transportation problem posed by the rubber shortage is uppermost in our minds today. Our whole pattern of life—living here and working 5 miles or 105 miles away—may have to be changed. Satellite living groups may grow up around defense factories and other employment centers. If our democracy is to survive, these areas had better be as well planned as our bombers are, instead of being allowed to expand on the hit or miss pattern by which our towns, like Topsy, just grew. This war will not be won by dormer-window architects nor by leaders, civil or military, who persist in using the methods of the last century, or even the infantry tactics of 1914.

"As to the houses in the exhibition, if they are worthy, they must be allowed to speak for themselves. Their plans and their appearances will not appeal to the 19th century romanticist who loves thatched cottages. But persons whose time is valuable will prize the conveniences found in them. And those whose lives are simple, direct, and unaffected by fads and foibles, will like them too. They are cut to the life patterns of their occupants, as is a suit of clothes. Their gardens are but a step away or maybe they come right indoors. In any event they are divided into spaces for living as directly and sensibly as are the houses.

"It cannot be stated too often that modern architecture is not a style, but is the expression of a way of thinking. It says: Western life, which has evolved through the years and of course is colored by the cultures of the past, is nevertheless a young and vibrant force bursting from its fetters, and by the directness of its plan, can be a sign-post to help us to a better life in the world of tomorrow.

"The exhibition employs a new technique for architectural display. It is not just pictures stuck on the wall, but is free standing and three dimensional. Models, partly drawn in perspective and partly built up at large scale of the actual materials of the houses themselves, are so arranged that one may touch and look inside of them."

2—EXHIBITION OF ERIC MENDELSOHN—No advance information regarding the nature and extent of this exhibition is at hand. But Mendelsohn is one of the foremost architectural figures of modern times. If the exhibition does justice to its subject, it is something to look forward to.

18th Century mahogany and gilt armchair, on display at "The Chair" show at de Young Museum, San Francisco

BRITAIN AT WAR

The exhibition of paintings, photographs, camouflage, posters and cartoons entitled "Britain at War" closes at the California Palace of the Legion of Honor on April 26. The exhibition comes direct from the New York Museum of Modern Art, and will continue its tour of Canadian and American cities.

As a demonstration of how a nation's artists can be used in national defense, this exhibition may

IN AN EVER CHANGING WORLD

CARNIVAL—Oil by Lloyd Wolf and exhibited recently at the San Francisco Museum of Art. The carnival theme is used for "Sawdust and Spangles," a circus art show now running at the San Francisco Museum of Art.

prove useful on this side of the Atlantic. It was originally arranged with the cooperation of Sir Kenneth Clark, Director of the National Gallery in London, who has been in charge of selecting and assembling the paintings from England. The diagrams and models in the camouflage section were executed by the faculty and students of the Art School of Pratt Institute, Brooklyn, New York. The remainder of the exhibition was assembled in London.

Thomas Carr Howe, Jr., Director of the California Palace of the Legion of Honor, is arranging a supplementary exhibition entitled "America at War," which will include photographs, paintings and posters, illustrating the effect war has made on the American people and demonstrating the use to which the American artist is being put by the United States Government.

NEW SHOWS AT DE YOUNG MUSEUM

THE CHAIR—Bearing simply the title, "The Chair," a new exhibition is now on view at the de Young Museum. Originals of the past and present—examples from 1492 to 1942—have been assembled by the Museum, and eastern collectors as well as local ones have kindly donated various types of "seating arrangements" as styled throughout the ages. This comprehensive exhibition shows how certain standard types of the common chair, used as early as 4,000 years ago in Egypt and later in Greece, have been varied through the years. On Saturday, the 25th of April, at 3 o'clock, Dr. Elisabeth Moses will lecture on the exhibit. She will trace the origin of this most utilitarian piece of household furniture, comparing ancient styles with those of today. "The Chair" will remain on view through the middle of May.

ISLAMIC ART—Rare objects representing Islamic Art at its finest have been lent the de Young Museum by the Heeramaneck Galleries in New York City. Pieces dating from the 11th century in both the fine and applied arts are currently being shown. Examples of ceramic ware in delicate and subtle tones from the "Near East"; fine textiles of early Persian and Indian origin; metal crafts from Egypt, Syria and Persia, and beautiful illuminated manuscripts, most of them from India and Persia.

BATES MEMORIAL EXHIBITION—In tribute to the late American actress, Blanche Bates, the de Young is currently offering a memorial exhibition. Old programs announcing Miss Bates' appearances on the stage; photographs of the late actress in many of her famous roles; photographs also given to her by contemporary celebrities of the theater world; some of her private collection of hats (she kept one a year representative of the style of that season); and many other mementos recalling the career of this distinguished actress, make the show a most popular one particularly with the theatrically minded.

EAST INDIAN TEXTILES—A new show, the first in a series which will feature the fine collection of textiles given recently to the de Young Museum by Miss Katherine Ball, opened April 12th to be on view for approximately a month. This initial exhibition spotlights the art of India as represented in its woven and dyed textiles, and will be followed by similar shows of examples of the same art in Java, Bali, China, Japan, Burma and the Philippines.

JUNIOR COLLEGE SHOW—Opening April 18th the Seventh Annual Exhibition of Fine and Applied Arts by Students of Northern California Junior Colleges, is now in full swing at the de Young. The show stresses the individuality and style of these "artists of the younger generation" soon to take their place in the art world of tomorrow. The show will be on view for about a month.

OLD SAMPLERS—Of interest to collectors of "Home Sweet Home" crosstitch patterns as hung on the walls of our grandmothers' living rooms is the exhibition of "Old Samplers from Europe and America" opening April 19th for an extended "visit." This show promises to be an amusing and colorful one presenting the "homemade art" of the "gentler sex" a few decades ago.

"NAVAL SHORE ACTIVITIES"

Important addition to the "Britain at War" exhibition at the California Palace of the Legion of Honor, San Francisco, is an exhibition of water colors and drawings by Vernon Howe Bailey, entitled "Naval Shore Activities," lent by the United States Navy.

Bailey, a civilian artist, prepared the series under the special authorization of the Navy Department. He visited naval shore establishments along the Atlantic Coast from Bath, Maine, to Norfolk, Virginia, sketching all types of activities from boat loading to ship repairing.

In connection with the "Britain at War" exhibition, Dr. Jermayne MacAgy is conducting special discussion groups each Wednesday morning during April at the Museum. There is no admission charge.

MEXICAN PRINTS FROM N. Y. FAIR

Stopping at the California Palace of the Legion of Honor in San Francisco for one month (March 22-April 23) on its tour of the country is an exhibition of contemporary Mexican Prints, which were at the New York World's Fair in 1940.

The exhibition was assembled in Mexico City by Inez Amor and Alberto Misrachi through negotiations with the American National Committee of Engraving. These prints form part of the program of the committee to further public interest in the graphic arts and to develop a greater understanding of the cultural background from which they came.

Although a number of the artists have exhibited in the United States before, this is the first time that so comprehensive a view of Mexican art in black and white has been available to the American public. There are twenty-five artists represented among one hundred and seventeen prints, so that many individual interpretations of a wide range of subjects is presented. Many of the artists, such as Diego Rivera and Jose Clemente Orozco, are famed chiefly for their work in other media.

The prints give a vivid cross-section of the life and customs of Mexico. People, particularly of the humble classes, form the favorite subject matter, although occasionally a landscape is done. However, the prints are particularly noteworthy for their social content, revealed through a variety of styles and techniques.

COMPETITION FOR BEST STATUE

The Liturgical Arts Society has just announced to 76 American sculptors that, on the basis of photographs of their work submitted last fall, they have been selected to compete for a statue of Christ, the Light of the World. This statue will form the main element in the architectural design of the facade of the new building, now completed, which will house the national headquarters of the National Catholic Welfare Conference, Washington, D. C.

Each competitor is to submit a model 30 inches high of the final statue, which is to be of bronze and 15 feet in height over all. These models will be judged early in July, 1942, by the following jury: Frederick Vernon Murphy, architect of the building and head of the school of architecture of the Catholic University, Washington; Barry Byrne, architect, designer of many distinguished churches and educational buildings both in this country and abroad; Lee Lawrie, C. Paul Jennewein, Gaetano Cecere, sculptors.

The prizes offered are as follows: $1,500 first prize; $500 second prize; five additional prizes of $200 each. The winner will be awarded a contract to make a finished model, full-size, for the final bronze statue, and for this work he will receive $6,000 additional fee. The terms of the program and of the contract which will be awarded the winner have been framed in consultation with the Committee on Competition Program of the National Sculpture Society. The National Catholic Welfare Conference is the central agency through which the various American Catholic bishops confer and act with regard to problems of national rather than local interest.

For details of the program address Maurice Lavanoux, Secretary, Liturgical Arts Society, Inc., 300 Madison Ave., New York, N. Y.

FAMOUS FILMS AT MUSEUM

The old motion picture series at the San Francisco Museum of Art continues with a new program of famous films which are being shown Tuesday afternoons and evenings. Many of the films in this new series are shown in response to frequent requests received by the Museum. Service men are admitted free of charge; hospitality houses are furnished with tickets for distribution.

S. F. ARTIST WINS AWARD

Theodore C. Polos, young San Francisco artist who, during the last few years has emerged from obscurity to take awards in several San Francisco exhibitions, has done it again on a national scale. Polos' oil "Young Girl" submitted to the Third Biennial Exhibition of Contemporary American Painting at the Richmond, Virginia, Museum, won the first prize—the John Barton Payne medal—and has been purchased by the Museum there. Polos has exhibited frequently at the San Francisco Museum of Art and has several works in the Museum's collections.

AT THE GALLERIES

The museums contribute the following announcements of events to occur after publication date of the ARCHITECT AND ENGINEER:

CALIFORNIA PALACE OF THE LEGION OF HONOR

EXHIBITIONS

CONTEMPORARY MEXICAN PRINTS. Closing April 23rd.

BRITAIN AT WAR. (Circulated by the Museum of Modern Art.) Closing April 26th.

MOTION PICTURES

April 25—**French Film Pioneers.** Three directors who made history in the exuberant early days of French film production are represented here. Zecca was exceptionally versatile and a master of the trick film and the future newsreel. Cohl was the father of the animated cartoon while Durand produced one of the classics of the pre-war cinema. (c. 1907)

ORGAN RECITALS

Uda Waldrop, Organist. Each Saturday and Sunday at 3 p.m.

SAN FRANCISCO MUSEUM OF ART

EXHIBITIONS

WESTERN LIVING. Five modern houses. Closing April 29.

ADVANCE GUARD OF ADVERTISING ARTISTS. Closing May 3.

PAINTINGS BY HORACE PIPPIN. Closing May 3.

ROUAULT PRINTS. Closing May 3.

RETROSPECTIVE EXHIBITION OF ERIC MENDELSOHN. Closing May 3.

INTER-AMERICAN PHOTOGRAPHIC SALON. Closing May 3.

AMERICAN ACADEMY IN ROME REGIONAL COMPETITION. Closing May 3.

SAWDUST AND SPANGLES. Arts of the circus. Closing May 10.

LECTURES

THE CARQUINEZ HEIGHTS DEFENSE HOUSING PROJECT. Color film with comment. William Wilson Wurster. April 22 at 8:30 p.m.

UNDERSTANDING CONTEMPORARY MUSIC. Charles Jones. April 26 at 3:00 p.m.

THE AMERICAN CIRCUS. Robert Barbour Johnson, circus writer and artist. April 26 at 3:00 p.m.

PIPPIN THE PRIMITIVE. May Le Moyne. April 29 at 8:30 p.m.

MOTION PICTURES

THE NEW YORK HAT, with Mary Pickford and Lionel Barrymore.

THE FUGITIVE, with William S. Hart.

THE CLEVER DUMMY, with Ben Turpin, Wallace Beery.

A FOOL THERE WAS, with Theda Bara.

April 21, 2:30 and 8:00 p.m.

MICKEY, with Mabel Normand.

GOODNESS GRACIOUS, with Clara Kimball Young.

April 28, 2:30 and 8:00 p.m.

M. H. DE YOUNG MUSEUM

THE CHAIR—PAST AND PRESENT. (Originals from 1492 to 1942.) Through April.

EIGHTEENTH CENTURY MEISSEN. The earliest European Porcelain. Through April.

EXHIBITION OF ISLAMIC ART, lent by Heeramaneck Galleries. Through April.

BLANCHE BATES MEMORIAL EXHIBITION. (In Pioneer Study Room.) Through April.

FINE AND APPLIED ARTS by students of Northern California Junior Colleges. Through April.

OLD SAMPLERS FROM EUROPE AND THE UNITED STATES. (In the Textile Study Room.) Opening April 5th.

TEXTILES FROM INDIA, from the collection of Miss Katherine Ball, recently donated to the de Young Museum. Opening April 12.

NEW CAMOUFLAGE FACTS FOR THE ARCHITECT
Effective daylight concealment begins with scientific paint development
Modern warfare has taught camoufleurs costly lessons in deceptive painting. And after many months of research Premier has developed a complete series of Army tested camouflaged paints, in a broad range of low visibility colors. They react properly under all types of photography, even defying infra-red—downfall of many cleverly disguised targets. Developed around an oil-base type formula for maximum durability and perfect surface for future repainting. Dark colors contain unusual heat-reflecting qualities.
In designing camouflage, specify Premier perfected camouflage paints—they insure successful concealment! Remember, if your camouflage misses—enemy bombers won't!
Write or telephone for data and consultation.
Infra-red makes many concealment paints turn traitor!
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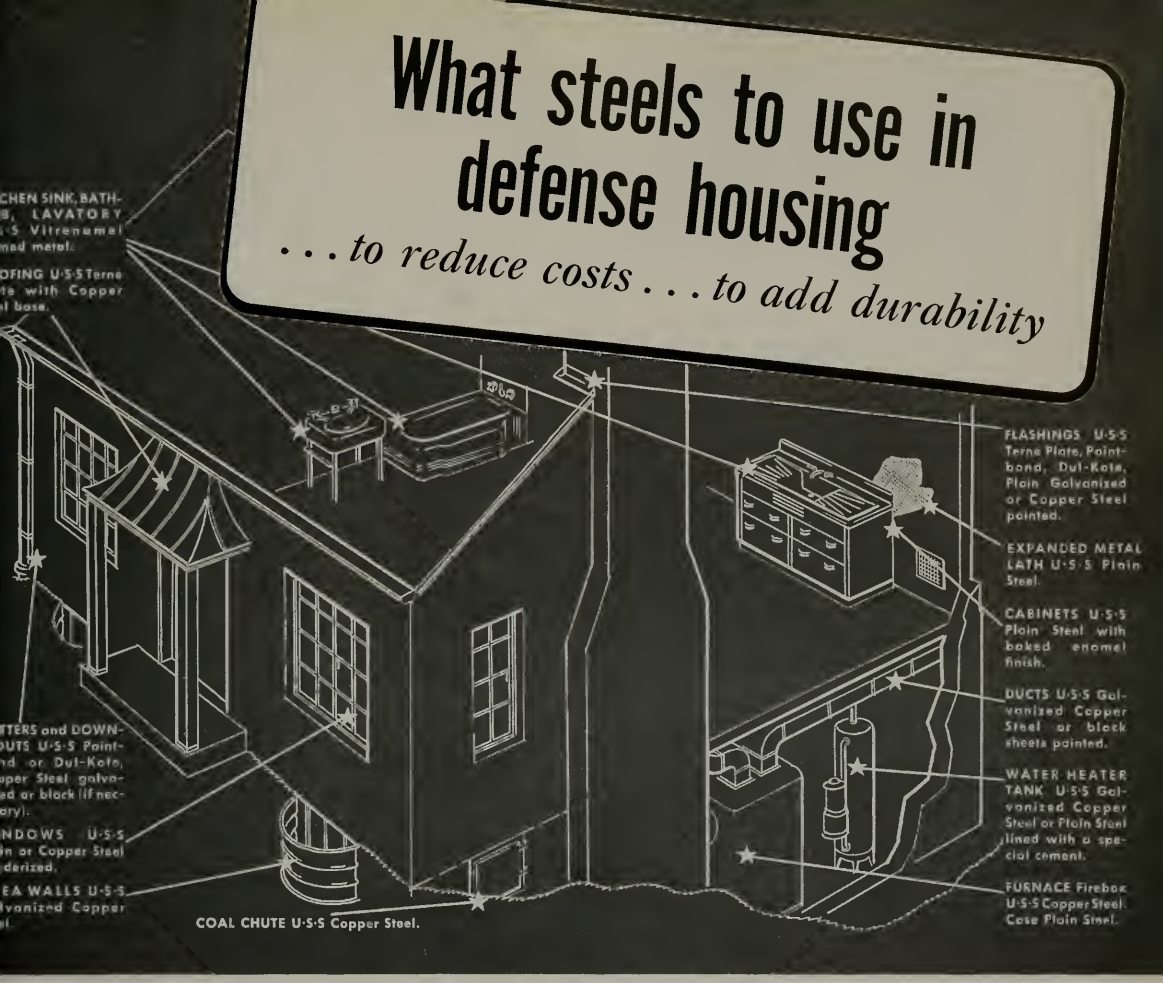
FOR SOUND CONSTRUCTION

What steels to use in defense housing

. . . to reduce costs . . . to add durability


CHEN SINK, BATH-
B, LAVATORY
S Vitrenamel
mad metal.
OFING U·S·S Terne
te with Copper
l base.
TERS and DOWN-
OUTS U·S·S Paint-
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COAL CHUTE U·S·S Copper Steel.
FLASHINGS U·S·S Terne Plate, Paintbond, Dul-Kote, Plain Galvanized or Copper Steel painted.
EXPANDED METAL LATH U·S·S Plain Steel.
CABINETS U·S·S Plain Steel with baked enamel finish.
DUCTS U·S·S Galvanized Copper Steel or black sheets painted.
WATER HEATER TANK U·S·S Galvanized Copper Steel or Plain Steel lined with a special cement.
FURNACE Firebox U·S·S Copper Steel. Case Plain Steel.

MANY types of steel are being made that actually double, triple, or quadruple the life of products made from them. Others permit lighter construction of sinks, lavatories, bathtubs, furnaces, and thus save much needed iron ore.

Properties and advantages of various U·S·S Steels

1. U·S·S Copper Steel—2 to 3 times the corrosion resistance of plain steel. Low cost. Can be used black or galvanized for gutters, downspouts, valleys, flashings, duct work, coal chutes, garbage receptacles.

2. U·S·S Copper Steel for furnaces — Saves considerable metal, has high resistance to smoke corrosion, maintains a tight fire box, gives a long, satisfactory service. Low cost.

3. U·S·S Copper Steel for hot water tanks — Galvanized or plain steel, lined with cement. The cement-lined tank is rapidly replacing alloyed metals now difficult to get.

4. U·S·S Paintbond—A galvanized Bonderized Steel. Permits immediate painting. Paint holds tighter, lasts longer. Highly recommended for all outdoor uses, such as gutters, downspouts, complete metal buildings for army camps, airplane hangars, air-raid shelters, industrial plants.

In the South and West, U·S·S Dul-Kote with similar properties to Paintbond is available. Only the method of manufacture is different.

5. U·S·S Vitrenamel — For formed bathtubs, lavatories, sinks. Takes a superior porcelain finish, decreases the amount of metal in the fixtures, makes dimensions more uniform for mass housing projects, equals the life of other porcelain enamel. Lower cost.

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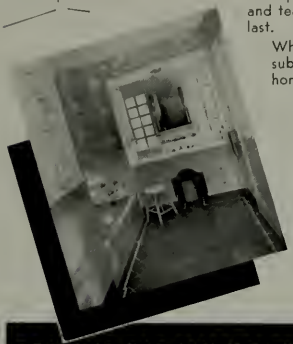
CARNEGIE-ILLINOIS STEEL CORPORATION, *Pittsburgh and Chicago*
TENNESSEE COAL, IRON & RAILROAD COMPANY, *Birmingham*

Scully Steel Products Company, Chicago, *Warehouse Distributors*
United States Steel Export Company, New York

UNITED STATES STEEL

Tile, like other leading products has many imitators. These copies may look exactly like the original but when put to the test of normal wear and tear of everyday use they don't last.

Why take a chance and use a substitute for the tile in your home.



ONLY REAL POMONA TILE offers these advantages: ENDURING BEAUTY . . . A WATERPROOF, STAINPROOF, EASY TO CLEAN SURFACE . . . COLOR-FAST FOR LIFE . . . PRACTICAL FOR FLOORS, WALLS and CEILINGS . . . TRUE COLOR BALANCE . . . PATENTED SPACE-RITE FEATURE.

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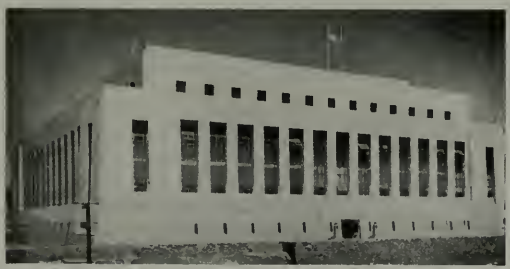
Uncle Sam Uses Corrosiron



Drain pipes and fittings in many Federal buildings, including the San Francisco Mint, pictured above, are protected with **Corrosiron** — a positive guarantee of long life and sure resistance to corrosion.

Corrosiron is used extensively for acid drain lines in hospitals, universities, high schools, laboratories. Is manufactured by —

Pacific Foundry Company, Ltd.
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CABOTS LIQUID BRUSH CLEANER
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Will Not Evaporate
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...the paint products that Western industry knows!

Every type of finish for every surface condition—inside or out. And Fuller's expert Service Department is ready to help you work out an economical answer to your paint needs.

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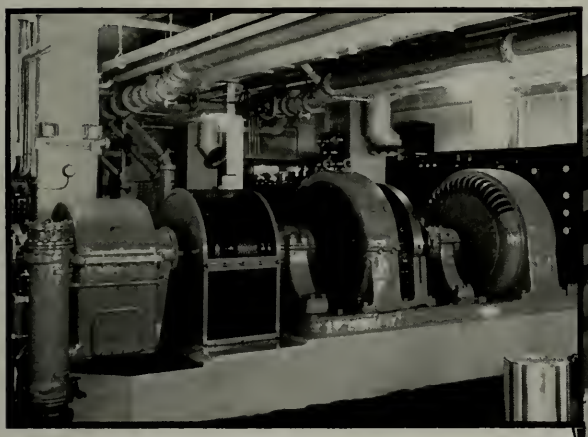
The Fuller Research Department is keeping abreast of the latest developments in blackout and camouflage paint. Call on this technical staff, with *your* problems!



Typical of the dependability of the whole Fuller line:

FULLERITE

For walls and ceilings. A tough, durable, glossy finish, works easily under the brush, with superior hiding ability and extremely high light reflectivity. Especially recommended, too, because under ordinary conditions Fullerite does not after-yellow. May be used on wood, plaster or concrete surfaces.

MYRATEC

A fast air-drying, high-gloss, one-coat enamel for finishing machinery, dado, pipe lines and other metal and wood surfaces. Withstands oils and greases. May be applied by brush or spray. Hardens dust-free in two hours.

Count on Fuller for these needs, too—barrel paints, floor finishes, specialized roof paints, rust inhibiting paints, tank paints.

FULLER PAINTS *They last*

EMERALD Brushes

"the best that money can buy"

BOTTLING PLANT FOR ACME BREWERIES, SAN FRANCISCO, CALIFORNIA
William G. Merchant, Architect

The fire escape makes an interesting light and shadow pattern on the gleaming glass facade

UNUSUAL DESIGN FOR BOTTLING PLANT

By FREDERICK JENNINGS

When Acme Breweries of San Francisco contemplated building a new bottling plant it was faced with two problems, both of which appear to have been solved by Architect William Gladstone Merchant. The first problem was limited ground area; the second, Acme's location in a residential district.

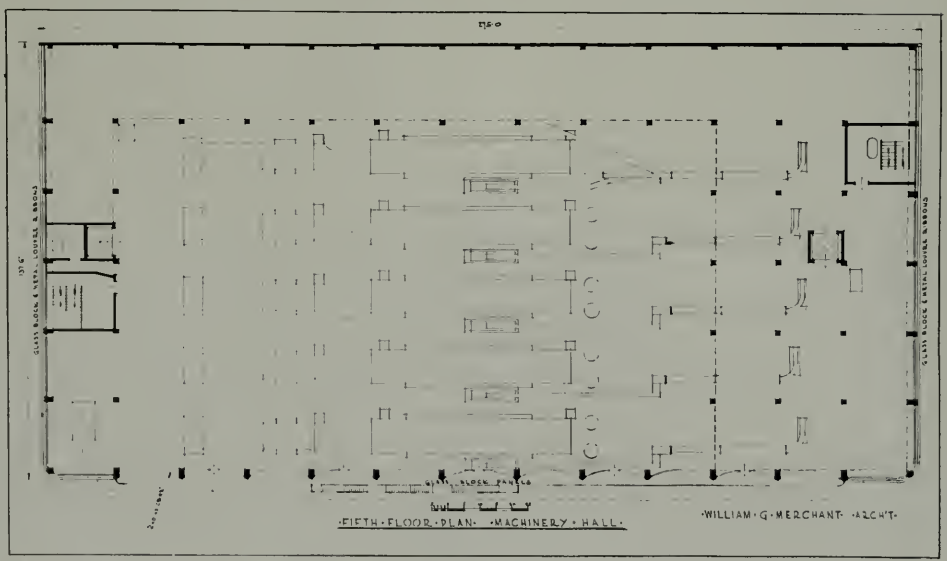
Back in the 60's, when the original brewery was built, the plant that was later to become Acme Breweries was located beyond the outskirts of the city. As San Francisco grew, however, its residential areas gradually enveloped the brewery, until, today, the plant is entirely surrounded by dwellings. While the city's better class homes are now far beyond the plant and this district has deteriorated considerably, the brewery is still located in a residential section, bounded by heavily traveled arterials leading to the newer districts. The improvement consequently had to be efficiently functional yet at the same time, add to rather than detract from the desirability of the area as a residential neighborhood.

In the development of the ultimate design, models were used in the study of various forms expressive of the steel, glass and fabricated units of industry.

It was felt that a scheme that would assume, eventually, grand proportions should deal in simple masses with vigorous lines. The upper story broke itself into unbalanced areas which disturbed the mass. This was due to the size of the machine room, and the projection of the trusses above the average roof line. Through further study of the exterior lighting of this room it was decided to remove as far as possible the glare from direct sun light, so a series of segmented concave bays of glass blocks were designed, shielded by a concrete marquee. This arrangement of glass bays, combined with the marquee, assisted greatly in organizing the exterior into a more simple mass than would have otherwise been the case.

The flanking series of long horizontal bars of concrete and glass blocks on this machine room floor give light to the mezzanine floors which

RIBBONS OF GLASS BLOCKS DOMINATE THREE FACADES OF ACME BOTTLING PLANT, SAN FRANCISCO



PLAN OF FIFTH FLOOR, ACME BOTTLING PLANT, SAN FRANCISCO
William G. Merchant, Architect

The gleaming Kraftiled Government Cellar where Acme beer awaits bottling in large one-piece, glass lined tanks

Unusual view of the dome of San Francisco's City Hall, taken across the No. 1 bottling line in Machinery Hall

occupy three sides of the machine room. Ventilating louvers of steel are alternated with glass blocks between the concrete bars.

The three lower floors below the machine room floor are storage floors, where the packed bottled beer is received through a system of conveyors. In order that light would not affect this stored product, a specially designed glass block was made with the interior face amber in color. A ribbon of these blocks forms the three facades of the plant.

Two large porcelain enamelled panels form the background for "Acme." These panels are all removable, so when desired they can be replaced with glass blocks, without altering the facade.

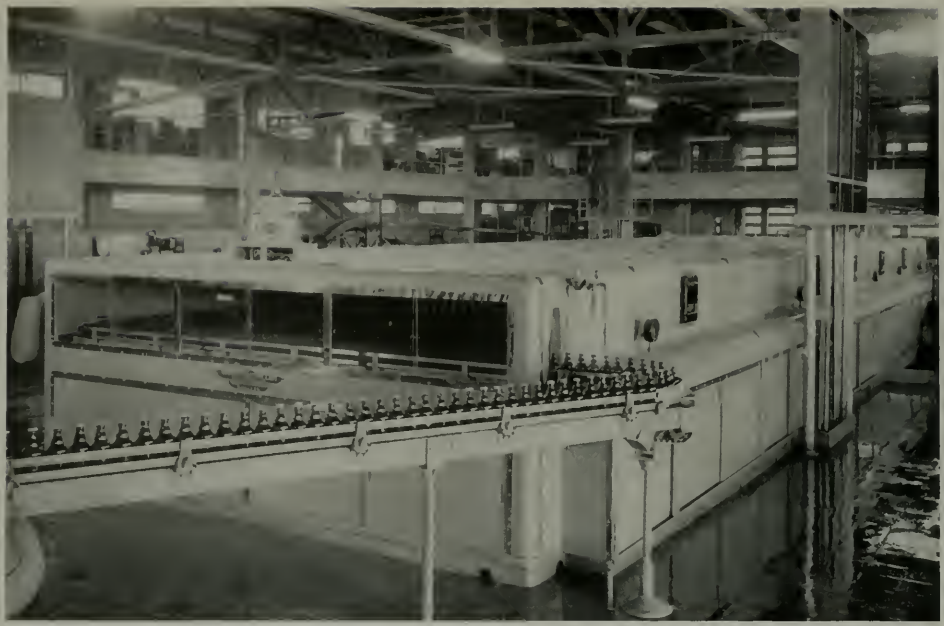
The lower floor is arranged for shipping by trucks. A series of overhead doors for truck loading compose the entire easterly facade of this story. In the north and south ends are the shipping offices, with a continuous passage from one street to the other at the westerly side of the plant.

The large fin-like piers between the doors are designed to a turning radius of trucks and lend considerable stability to the entire mass.

The glass block area equals 10,370 square feet, the dimensions of which are 347 feet long and 27 feet high, consisting of 8 x 8 blocks. The segmented concave bays are built up of 12 x 12 blocks.

The structure consists of a steel frame building five stories in height with mezzanines on the top floor, and steel trusses over the machine room. The floors are steel beam and the walls are reinforced concrete.

350 barrels of beer-in-the-making boil up to the sliding doors of the great brew kettle



THE FIRST BOTTLES OF BEER TO BE BOTTLED IN THE NEW PLANT ENTERING ONE OF THE BIG PASTEURIZERS

MACHINERY HALL, THE FIFTH FLOOR OF THE NEW BOTTLING PLANT, WHERE ALL BOTTLING, LABELING AND PACKAGING OPERATIONS ARE CONCENTRATED

This view of the Rinchel Mansion in Carson City was taken by Paramount Pictures while on location

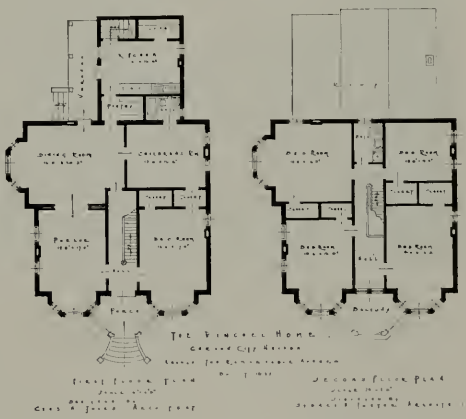
CARSON CITY'S GOLD RUSH HOUSE

By CY. FOSTER

When Paramount Pictures recently selected the famous old Rinchel Mansion at Carson City, Nevada, as the setting for their new picture, "The Remarkable Andrew," they made possible a public glimpse of what is perhaps the most remarkable existing monument of the gold rush era centered around Virginia City.

This famous old home, pictured here, was built in 1876-77, at King and Curry Streets, Carson City, on the site of the first log cabin Post Office in Nevada. The house stands today serene and well preserved amidst dense growths of luxurious lilacs, surrounded by huge cottonwoods which tower in bold relief against the azure blue of Nevada skies and the majestic Sierras which skirt the blue-green waters of Lake Tahoe.

This house has not only furnished the setting for many historic meetings, but it has witnessed during its 66 years, much of the social life and gaiety which characterized the hey-day of the Comstock era, when men were men and leadership fell to the worthy strong. In the early fifties Mathias Rinchel, then a lad living with his parents at Warsaw, Illinois, fired with the spirit of adventure and tales of fabulous fortunes and boundless opportunities, braved the hazardous journey o'er plains and mountains



Plans of the Rinchel home, drawn from the original blueprints, by Sydney Foster, Architect

"Between the outer windows draped with lacy curtains of what was in those days the 'parlor' is a French mirror in a gold covered frame, hand made and rich in detail"

ANOTHER VIEW OF THE "PARLOR" IN THE HISTORIC RINCHEL MANSION, CARSON CITY, NEVADA
Charles H. Jones, Architect

Westward bent, his fortune to seek. Mathias settled first in the Feather River area where he soon amassed a tidy sum in the placer diggings of the surrounding hills. But accumulated wealth failed to quench his ardor for adventure, so Mathias, following the discovery of gold in the deserts of Nevada, decided to retrace his steps over the Sierras. His destination was Eagle Valley where lay the City of Carson, then but an oasis on the desert road to Virginia City.

It was there that Mathias met and soon won the heart and hand of the lovely daughter of a prominent Staten Island builder, Marcella Coffey, and who, after the death of her mother in New York, followed her older sisters West.

The home which this happy couple built and subsequently occupied to the end of their days, was designed by a prominent architect of that day, Charles H. Jones, whose sketches, still extant, challenge the best draftsmanship of many of our modern architectural offices. The writer deems it an honor to pay this tribute to the memory of a great architect, and to the versatility of the craftsmen who executed his design. Of pressed brick made in nearby kilns and laid upon a foundation of cut stone which extends two feet below the level of the surrounding terrain, the walls of the Mathias house have withstood, without crack or craze, the sleet and snows of nearly seventy winters. They stand a living tribute to the matchless skill which those old craftsmen of a bygone day must have possessed.

Door and window sills are of native granite quarried from near-by hills, while the roof is copper and galvanized iron with a hand wrought iron grille surrounding the deck. The main roof, we are told, was originally covered with cedar shingles, cut from near-by trees,

(Turn to Page 44)

SOUTHERN CALIFORNIA HAS AN INTERESTING

BALDWIN HILLS VILLAGE

Owner, Rancho Cienega Corporation

Architects, Reginald D. Johnson and Wilson, Merrill & Alexander

LOW RENT DEFENSE WORKERS HOUSING PROJECT

People Forget Quickly

BUILDING MATERIAL FIRMS SHOULD KEEP UP THEIR ADVERTISING

The Advertising Federation of America, asserting that advertising is a force "urgently needed in this period of national peril," enumerates 39 services it can perform in helping the war effort.

"Always an important element of modern business," the Federation said, "advertising is a flexible tool readily adapted to the special needs of war."

The Federation said American advertising has these four major functions to perform during war:

"Continue advertising's indispensable role in the process of distribution and in the maintenance of the business structure; guide consumer demand to channels most readily supplied and away from scarce materials; assist the Government directly in its appeals to the people on specific war efforts; and help maintain public morale."

The need for continuing its advertising during wartime is important for every company which normally uses advertising in conducting its business, according to the Federation which said:

"This is particularly true of building material companies which are partially or temporarily out of the market because of priority restrictions or conversion of facilities to war production.

"One of the most valuable assets of every established business, and the most difficult to replace, is the distribution mechanism it has created, including trade contacts and channels, the prestige of its product and brand name, and the company's reputation and good will in the minds of its customers and the general public.

"But experience has shown that people forget quickly, and every year many new consumers come into the market. Companies which temporarily neglect or abandon their distribution mechanisms seldom are able to rebuild them. That is the experience of the past.

"But these valuable assets can be saved from destruction. They can be preserved through intelligent use of advertising, especially planned for the purpose."

And the time for adopting such a policy is **now!**

ONE ROOM APARTMENT

for dining, working, sleeping

Designed by
Jo Kim and Paul Bry

Two bookcases with protruding base-chests frame the sofa.

The left base-chest is the "storage" for the bed-linen, etc. Behind the painting at the top of the bookcase a door opens. Back of the door photos and other hobby-articles are shelved.

The right base-chest is the place for kitchen accessories, i.e., an electric stove, toaster, eggbeater, pots, pans and dishes. Behind the door at the top of the bookcase canned food and bottles are stored.

The surface of both chests is covered with tiles. Cooking on this tile surface is very simple and practical for light meals such as tea or coffee and sandwiches.

The arrangement is designed for bachelors, who wish to stay at home for small meals or who expect guests for an appetizer or a hot soup.

Parallel to the window a table 20"x40" and covered with a formica top, serves as a desk during the working hours and seats six people for a meal.

The sofa becomes a bed at night.

IDEAL BACHELOR'S QUARTERS

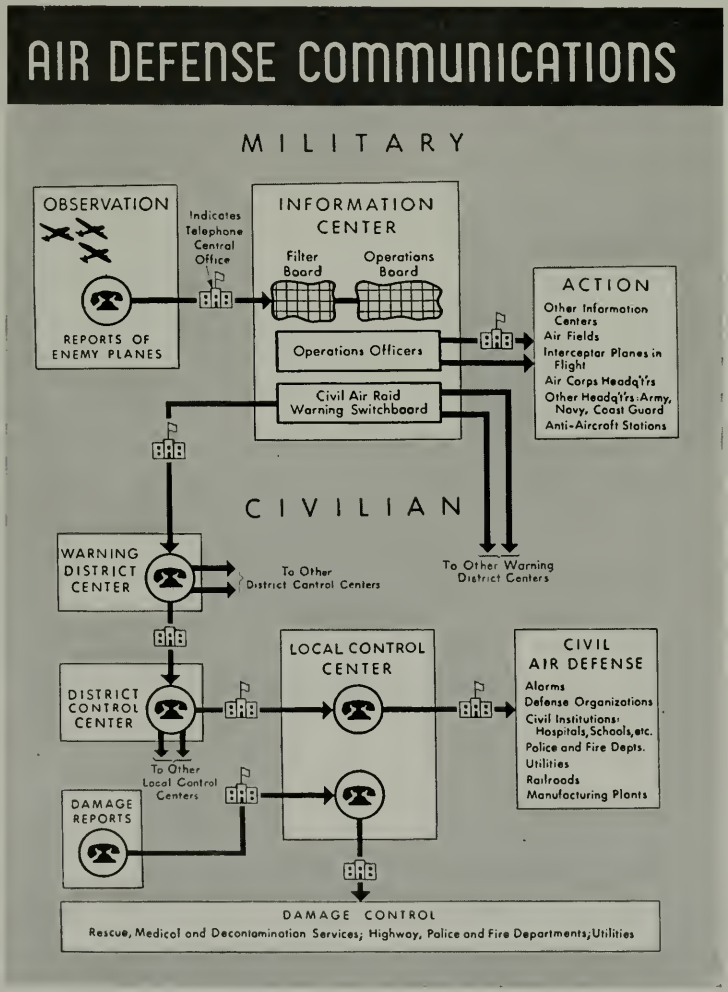
THE TELEPHONE — ITS PLACE

By JUDSON S. BRADLEY

in Bell Telephone Magazine

Operating in the United States today is the most extensive system of intelligence ever devised for military use: the aircraft warning network. Upon this system, operated by military personnel and many thousands of civilian volunteers, depends in no small part the defense of this country against attack by air.

This article is, in general, an account of how the aircraft warning system operates. More particularly, it is an explanation of the impor-



"TELEPHONE LINES AND AIR DEFENSE"—Only the upper portion of this diagram represents military activity. The lower part shows how the telephone serves Civilian Defense as well

How the Aircraft Warning System Operates

tance of telephone communication facilities in warding off or defeating an attempted attack through the air. It is written now in order that every telephone worker in the land may have personal satisfaction in the knowledge that the industry of which he or she is a member is contributing, zealously and effectively, not only to the prosecution of the war but specifically to the protection of our shores against aerial assault: assault which may come at any moment on stealthy wings.

Before describing the role of the telephone, however, a brief explanation of our Army air forces may help to make the picture clear.

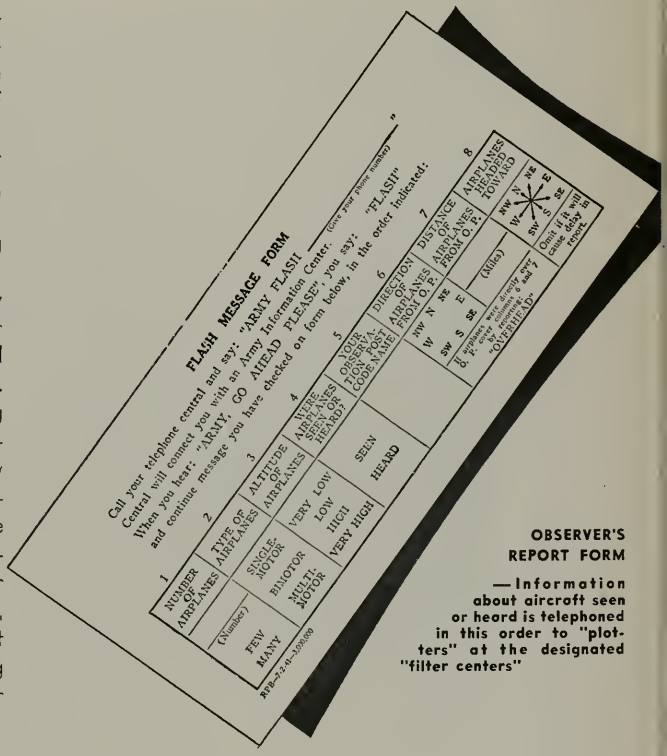
All combat units of the U. S. Army Air Forces stationed in the United States form what is designated as the Air Force Combat Command. This is organized into four Air Forces: the First, the Second, the Third, and the Fourth Air Force. Each operates in an area which represents approximately one quarter of continental United States: the north-east, north-west, south-east, and south-west. The Air Force in each of these four areas is composed of three combat elements: the Bomber Command, the Air Support Command, and the Interceptor Command. There is also a Service Command, charged with logistical arrangements.

The Bomber Commands are offensive striking forces, their function entirely aggressive.

The Support Commands cooperate closely with ground combat forces, and are the air partners of the team which, with mechanized ground units, has proved so effective abroad.

The Interceptor Commands, coordinating with the Anti-aircraft Artillery Corps, are responsible for the defense of this country against attack through the air. This they accomplish by destroying hostile aircraft in the air and by limiting their effectiveness by forcing them to high altitudes or away from their objectives. The means employed are, of course, interceptor pursuit squadrons and anti-aircraft artillery. They are also responsible for giving air raid warnings to civilian authorities and for ordering blackouts.

OBSERVERS ON DUTY—Day and night, at authorized observation posts in city, town, and country, thousands of civilian volunteers peer into the sky and report airplanes seen or heard


FLASH MESSAGE FORM
Call your telephone central and say: "ARMY FLASH" (Give your phone number)
Central will connect you with an Army Information Center. When you hear: "ARMY, GO AHEAD PLEASE", you say: "FLASH"
and continue message you have checked on form below, in the order indicated:
1 NUMBER OF AIRPLANES (Number) FEW MANY
2 TYPE OF AIRPLANES SINGLE-MOTOR BI-MOTOR MULTI-MOTOR
3 ALTITUDE OF AIRPLANES VERY LOW LOW HIGH VERY HIGH
4 WHERE AIRPLANES SEEN OR HEARD SEEN HEARD
5 YOUR OBSERVATION POST (CODE NAME)
6 DIRECTION AIRPLANES FROM O. P. NW N NE W E SW S SE
7 DISTANCE OF AIRPLANES FROM O. P. (Miles)
8 AIRPLANES HEADED TOWARD NW N NE W E SW S SE
Omit if it will cause delay in report.
Or, if planes were observed, say "OVERHEAD"

OBSERVER'S REPORT FORM

—Information about aircraft seen or heard is telephoned in this order to "plotters" at the designated "filter centers"

AN OPERATIONS BOARD—Evaluated information from filter centers of a defense region is reproduced on a table map of an Army Information Center, where the Controller, on a balcony overlooking the room, is enabled to take appropriate action

AN ARMY FILTER BOARD—Plotters receiving reports of aircraft from civilian observation posts place markers on the map to represent the information given. As markers from successive reports form a line, the facts they reveal are evaluated or "filtered." On the balcony are tellers, who pass the filtered information by telephone to other plotters at an operations board. (Pictured at top.) Women in all these posts are civilian volunteers

It is with the Interceptor Commands, and their use of and their coordination with and by the telephone, that the following pages deal.

HOW THE SYSTEM WORKS

Defense against enemy air attack begins with the warning network. Radio locators are indispensable in detecting the approach of aircraft from the sea and in locating airplanes in the air. Over land, there is a vast system of civilian observation posts which swiftly report any planes, over the existing network of commercial telephone lines, to Army "filter centers." There the telephoned reports are evaluated, and the "filtered" reports are passed on to information centers, where the course of approaching aircraft is plotted, much as a yachtsman lays out on a navigation chart the course for his day's run. The Control Officer, from the information thus visually before him, takes appropriate measures to meet the situation thus presented: orders the necessary pursuit planes into the air and gives them the course to follow to intercept the enemy; perhaps calls into action anti-aircraft batteries; orders air raid warnings to areas likely to be endangered.

That is a quick look at the general scheme. It has been brought into existence because, instead of necessitating a constant patrol in the air, it is an effective method of interception while conserving the air forces available.

This plan of air defense was not decided over night. The idea of the civilian ground observer system was conceived a decade ago, and has been tried out, with the cooperation of the telephone companies, in successive maneuvers since its inception. Early experiments were crude, but each test brought improvements and refinements. Today, upon the ground observer system depends in large part the efficacy of the Interceptor Commands which, day and night, are guarding our shores.

The system parallels in many respects—although with important differences—the air defense which, by the outbreak of the war in Europe, England had brought to a high degree of efficiency.

The interception system has several advantages.

It permits pursuit squadrons to operate from "ground alert"—in readiness to take the air against definitely located targets only. Estimates are that each plane on ground alert is the equivalent of 16 on patrol missions.

ON THE BALCONY — Instant telephone communication among the officers at an Army Information Center and to points outside is available through equipment such as is shown here

The system enables the formation leader to devote himself to combat action, since navigation and direction are done for him on the

MORE TELEPHONE EQUIPMENT—Since an Interceptor Command's operations are executed in terms of seconds, coordination of activities by telephone is of primary importance

AIR RAID WARNING SWITCHBOARD—Here the C. A. R. W. officer at each Army Information Center notifies designated civilian district warning centers of the approach of enemy planes. Note that there is a group of four jacks for each warning center: three to report differing degrees of danger, and the fourth to transmit the "all clear"

TELETYPEWRITER INSTALLATION FOR INTERCEPTOR COMMAND—Duplicating telephone circuits to a considerable extent, teletypewriters are used for communication with other points on routine matters or when messages of record are desired—as well as providing alternate routes in case of need

ground and sent to him by radio telephone up to the moment of contact with the enemy force.

The system also makes it possible to give adequate air-raid warnings to Civilian Defense authorities in time to permit them to take whatever measures the situation calls for.

AIRCRAFT WARNING NETWORK

Land area of continental United States comprises 2,977,128 square miles. All of it, except for certain inland areas in the west, has been ruled off, on small section maps, into units one mile square. In each unit has been placed a symbol indicating the presence or absence of a telephone in that area. Telephones of the Coast Guard, Forestry Service, and similar agencies have been indicated. The telephone companies, Bell and independent, did that job, and turned the maps over to the Air Corps' four Interceptor Commands.

That was the start of the present ground observer network. On these maps, starting with an indicated telephone, Air Force officers laid circular templates scaled to an eight-mile diameter, and drew overlapping circles. At some point within each of these circles an observation post was carefully selected and a trustworthy citizen appointed chief observer. To obtain this enormous organization, aid of the Office of Civilian Defense, State Defense Councils, and the American Legion was enlisted. Each chief observer appointed his deputy observers, and obtained enough volunteer observers to insure constant coverage of the post—24 hours a day, seven days a week.

So, day and night, those observation posts which have been activated by the Army are manned by these patriotic civilian volunteers. Each of these thousands of posts has its code name; each observer has his instructions—or hers, for many women are among the watchers.

An observer at an authorized observation post, seeing or hearing an airplane, or several, goes to the telephone, says to the operator "Army Flash," gives the telephone number of his post—and initiates a train of events which are astounding both in their complexity and in the speed with which they are executed. Speed is of the essence, since the flight observed may be hostile aircraft approaching an objective at hundreds of miles an hour. And so carefully coordinated are all the elements involved in defense against air attack that in operating today they exhibit in high degree the teamwork which makes the system effective.

The telephone operator, receiving the "Army Flash" call (and screening out any such call from an unauthorized telephone), connects the observer, either directly or through her toll center, over regular commercial circuits to the regional Interceptor Command filter board terminating at a point on the filter board corresponding with the observer's own location. The value of this arrangement will be apparent from a description of operations at the filter board.

The filter board, near a city selected because of its tactical location and its telephone facilities, is a very large map of the area it covers, so mounted that it becomes in effect a table. It is marked off into squares designated by code names and numbers. These codes correspond with those of the observation posts in the area. Around the map sit the plotters: all civilians, all volunteers. To them come the calls from observation posts, each call routed directly to the plotter nearest the mapped location of the post.

Receiving a signal light and an "alert" tone at her position, indicating a "flash" call, a plotter, equipped with a telephone operator's set, answers "Army, go ahead, please," and receives the report from the observer at his post.

The observer reports only non-technical facts, as instructed by the Army: number of planes seen or heard; whether single-, bi-, or multimotored; apparent altitude; distance from the observation post; and direction of flight.

The plotter adjusts a marker to represent the information just given her, and places it on the map at the proper coordinate location of the reporting observation post, pointing in the reported direction of flight. This is accomplished in a matter of seconds, and the plotter is then ready at once to receive a call from another observation post.

This operation, it must be understood, takes place many times in rapid succession as one

observation post after another reports—since the speed of planes is great and observers are located only a few miles apart. It takes but a moment for the markers on the map to make a definite line. Also, reports of a flight from successive observation posts corroborate each other, and thus of themselves rule out an occasional discrepancy on any one report.

The markers, having so swiftly become a line, are now as swiftly evaluated by a "filterer," who places on a small stand nearby cards describing the observed flight, and replaces the markers with arrows indicating direction. To show the speed of the flight, the color of the arrows is alternated at regularly timed intervals.

The information about each airplane flight in a filter area, having been thus evaluated or "filtered," is now ready to be transmitted instantly over private telephone lines to an Army information center.

The heart of the aircraft warning system is the information center. It is here that decisions are made, action is initiated.

Here is the operations board for the particular defense region. Like the filter board, but larger, it includes all the filter areas of the region. Here, too, plotters place their symbols; but now they are duplicates of the evaluated information received moment by moment from tellers at each filter board in the region.

In the same room are the seaward board, on which all flights approaching from the sea are plotted; and the status board, on which are shown the availability, position, and condition of pursuit squadrons in the region.

ARMY INFORMATION CENTER

On a balcony overlooking these three boards sit the men who decide, and the men who help them. Contact among them, even between those who sit side by side, is by telephone.

First comes identification of the flight, from location and direction—if it can be identified. On the balcony, with this responsibility, are representatives—liaison officers—of the Army, the Navy, and the Civil Aeronautics Administration.

On the balcony is the Controller. He is, or acts for, the Commanding Officer of the region. It is he who orders into the air, from the most logical field in the region, pursuit of sufficient strength to effect interception of an enemy flight—of which more in a moment.

Acting as liaison officers also, and likewise on the balcony, are other important individuals:

The Anti-Aircraft Officer notifies the anti-aircraft artillery, putting these forces on the alert.

Radio officers control various channels, including those with planes in flight.

The CAA representative can order all civilian planes grounded.

The Federal Communications Commission representative can silence broadcasting stations when and where necessary.

The Civil Air Raid Warning Officer notifies designated civilian district warning centers of the approach of enemy planes, transmits the "all clear," and issues the Interceptor Commander's orders for black-outs. With the giving of such warnings, the responsibility of the Air Force for local civilian defense ceases, since the kind and extent of passive defense measures in any community are matters to be handled by local civilian authorities.

Once the Controller orders pursuit planes from the ground alert into the air, he immediately turns over to an Intercept Officer the navigation for and direction of those planes in flight. This officer, in a nearby room with assistants, calculates the most effective point of interception. He knows the speed, rate of climb, and other characteristics of the pursuit planes, and is in possession of information about weather conditions throughout the region. He is informed of the situation as it develops on the filter map with respect to the particular mission he is directing. Constantly in touch by radio with the pursuit flight, perhaps through successive ground stations, the Intercept Officer guides the planes to the point of contact with the enemy. When the Flight Commander tells him, in a single word, that contact with the enemy has been made, the Intercept Officer relinquishes control. In combat, the Flight Commander is on his own—although he can resume radio communication

with the information center at any moment.

Just as the operations board at a regional information center duplicates and combines the evaluated information from several filter boards, so does a command post picture for the Commanding General of an Interceptor Command the situation in an entire Air Force area. Here he can observe and oversee all the activities of his command. He is, therefore, in position to dispose of his forces to meet any situation which may arise.

This account of the operation of the interception system, incomplete though it is, should confirm the remark made on a preceding page about team-work. Bearing out the accompanying statement about speed is the fact that it has taken you, the reader, longer to progress this far than would be required for the dispatch of pursuit planes on a mission following the receipt at a filter board of the first "flash" messages from the observation posts which start the process here described.

This has been, necessarily, a generalized picture. Nothing has been said here, for obvious reasons, about precautions in effect nor the speed with which operations can be resumed if any vital element in the system should be damaged. It should perhaps be pointed out, too, lest this report seem unrealistic, that no method of interception can rout or bring down, every time, every plane of an enemy formation. Some may escape attack and complete a mission; particularly, as the experience of England still proves, in night assaults.

To the people of this country it should be heartening reassurance, none the less, to know that around them is spread the protection of the aircraft warning network. Watching over them, on behalf of the Interceptor Commands, are those thousands upon thousands of volunteers who, motivated wholly by patriotism, are contributing their long hours at observation posts and filter boards and information centers.

In charge of the whole system are Army Air, Artillery, and Signal Corps officers who have devised and adapted and tested and improved and now operate it: cool, keen, capable men, aware of the ever-present danger of attack by air, sensible of their grave responsibility to protect the nation and its citizens. Practical and efficient they are, too; and the Bell System's contribution to this particular phase of military defense has been made the more smoothly and effectively because they have been always receptive to suggestions which may improve the technical operation of the system over which they have charge.

THE TELEPHONE'S PART

Although little has been said in detail about the use of the telephone in the system described, it must be evident that every operation, from the reports of airplanes seen by civilian observers to the ordering of pursuit into the air, is keyed to and carried out by telephone. And even the pursuit flight is controlled by Army radio telephone sets connected by telephone circuits to information centers.

Fundamental to all is the use of existing commercial telephone lines, both of the Bell System and of independent telephone companies, made possible because the United States is served, as is no other country, by a network of telephone lines not only interconnecting cities and towns and hamlets but reaching out into almost every countryside. "Flash" calls from observation posts, using regular commercial telephone lines, get absolute right of way, of course. Where certain telephone and teletypewriter circuits may be required for the use of the Air Forces exclusively, these are provided in most cases from available lines. Even the intricate and vitally important intercommunicating systems by which coordination is attained at filter and information centers is put together out of standard parts, with a minimum of special equipment. The use of standard equipment—although specially arranged—expedites installation, and minimizes maintenance problems which might result from the use of specially designed facilities.

The aircraft warning system, as it exists today, might almost be said to be a joint achievement of the Army Air Force Interceptor Commands and the Bell System. The leadership is the Army's, obviously. Working with the Interceptor Commands, executing and also contributing during trials, tests, and maneuvers, have been the Bell Telephone Laboratories, which have designed and adapted circuits and equipment for special purposes; the Western Electric

Company, which makes what the Laboratories design; the System's operating telephone companies, and independent telephone companies as well, which train their operating personnel and make necessary arrangements of the physical facilities; the Long Lines Department, which provides and assigns the inter-city circuits and also must train those concerned with their use for such purposes; and the staff of the A. T. and T. Company, by whom the System's obligation in its broad aspect is correlated.

"THE DETERMINING FACTOR"

To summarize and conclude this discussion of the aircraft warning system, it is perhaps appropriate to quote from a broadcast made from an Interceptor Command information center by a military commentator not long ago:

"This is essentially the same warning and interception system that the British have used in interdicting large sections of their island to enemy bombers. The systems were developed independently, and we are adapting British methods to our own use, while we pass on to them whatever we have discovered that they don't already know.

"The difference between our system and the British is this: England has high-quality telephone service, but there are relatively fewer telephones. That means that there are blank spaces that aren't covered by observers.

"That's not the case with us—we can have more observers because we have the finest telephone service and equipment in the world, all concentrated under one company*; a company that has been so enthusiastically helpful in cooperating with the Army that it can be said with assurance that it couldn't have been done without the telephone company. They have developed special equipment; their engineers have worked with the Army over long periods; they have designed and built information centers and lent their experts to teach people how to run them; they have done, are doing, a magnificent job. However, the essential point about this whole ingenious system is so sound—proved so sound in battle—that it may well be the determining factor that wins wars."

* This reference is obviously to the function of the A. T. and T. Company in co-ordinating, at the Army's request, the activities of the Bell System companies and the country's several thousand independent telephone companies to provide service for the aircraft warning network.—Ed.

HOW CONVERSION SAVES WORKERS JOBS

Any engineer will tell you there's no more a universal blueprint for conversion of a plant from peace to war production than there is a universal elixir for the treatment of disease.

But the experience of one plant may point the way for others.

Any time-saver is a boon, for swift conversion of the American industrial plant to war production, on a scale staggering to the imagination of a pre-1942 minds, is a desperate need in America today.

With the thought that the example of one firm might be of help to others, the Information Division of the War Production Board studied the experience of a big electric company on which this article is based.

At the outbreak of the European phase of the present war, one of this plant's chief interests and its largest single operation was the manufacture of refrigerator cabinets on special purpose machinery ill-adapted to other uses.

Today, refrigerator cabinets are almost lost among a variety of war orders, including such items as howitzers, gun mounts, search light power plants, Navy turbines, mine sweeper equipment, airplane gun turrets, and ammunition hoists.

In the course of the change-over, every possible regular employee, skilled or unskilled, who could be used in war work after proper training has been pressed into service.

Old men in their 60's and 70's, long since retired, have been called back to their posts and work side by side with young men fresh from vocational training and in-plant instruction.

Old machines and tools, whose designers never thought of them as instruments for the protection of America through arms production, have been turned to war work.

New machines and tools have been necessary, new building and equipment have appeared on the scene, but wherever possible, to save time and money and machine tool-making resources of the country, existing company equipment has been pressed into service.

At the time the first war order—for the howitzers—was booked, in October, 1939, the company had seven main buildings, five occupied and two empty.

The used buildings included the refrigerator cabinet plant, the electric locomotive and railway control apparatus works, the industrial and transportation motors division, a tool shop and a foundry. Employment on May 1, 1940, stood at 5,696, with 2,281 of these busy making refrigerator cabinets.

First trend was toward taking on war orders as a frosting on the cake of normal civilian production. New staffs were formed around the company's regular key men, with the result that by May 1, 1941, total employment had soared to 9,054 with 3,012 men and women busy on refrigerator cabinets.

By that time, 251 men were busy making gun mounts and 351 were occupied making Navy turbines in one of the recently empty buildings.

By last August, however, labor and material supplies became too difficult to allow continued full-scale civilian production of consumers goods and the Office of Production Management, since replaced by the War Production Board, served notice there would be a sharp cut in refrigerator production, amounting, in this plant, to about 46 per cent under the July rate.

The result was that by September 1, 1941, while total employment at the works had risen still further to 9,695, refrigerator cabinet payrolls had been cut to 2,097.

Editor's Note—This article was prepared by the Division of Information, War Production Board, to show manufacturers how they may be able to speed up war production.

Further cuts during the fall and winter forced the level down toward 1,500 employees, while total cabinet production fell from about 18,600 a week to less than 7,000, although total works employment remained about stationary around 9,600.

New employment on war work accounted for the maintenance of this level. By the year-end more than 1,200 were busy making Navy turbines. Payrolls on other war work are steadily on the increase.

Accomplishment of this change-over involved some severe headaches for the management. One of the toughest concerned the problem of what to do with the unskilled and one-skilled workers normally in the refrigerator cabinet plant.

Executives determined to try, as far as possible, to provide for the welfare of these employees who, through no fault of their own, were suffering from restriction in consumers goods production.

The simplest method was to try to find war work adapted to the plant's facilities. After some months, an order for ammunition boxes was placed with the firm but, so far, employment resulting is tiny and temporary.

The company also undertook to train the refrigerator workers to new skills. There was no time to make them all-around machinists—that takes years. But there was time to teach all who were willing to undergo training and who had the natural mechanical aptitude for factory work, skill in one or more operations of a single machine.

As fast as possible—some never lost a day's work—workers let out of the refrigerator plant were shifted over to the machine shops. Thus, alongside old-line skilled and versatile craftsmen, they studied and watched as these men performed their duties on single operations. After a week or two, learners generally were able to operate the machine themselves.

Thus, a typical refrigerator worker from the assembly line might be placed alongside a highly skilled machinist operating a turret lathe in the Navy turbine plant.

By seeing the machinist go through the same motions on the same part day after day for a week or two, and having the operation patiently explained to him time after time, the learner would be qualified to do the same thing under close supervision himself.

Then, for two or three months he would operate the machine himself under the eye of an instructor overseeing 10 or 12 learners at the same time.

Thus, after the first week or two, 9 or 11 machinists were released for other machines and other new learners or for jobs where their more versatile skills were needed.

And at the end of the two or three month period, the learners themselves would be skilled enough to stand on their own feet, although their skill, would, of course, be on single operation jobs.

In this way, during 1941, more than 421 unskilled employees were transferred to jobs as "learners." About another 200 were absorbed in regular transfers, for they had skills to start with.

Further, no outside help was employed where the reservoir of furloughed employees could fill the needs.

But other labor was necessary.

Thus, the school board, in two annexes—part of the high school and part of the electric works — conducts an eight-week course for about 200 men in three shifts. Included among the courses are blueprint reading, shop practice, and use of instruments in inspection.

These men, or men with similar rudimentary knowledge picked up in other jobs, then are ready for learners' jobs in the works.

Still another supply of skilled labor was needed, however, and the plant added some 617 skilled operators to its payrolls during 1941. Among these were such men as—

A 68-year-old music teacher, watchmaker, and hobby mechanic now busy on tiny precision parts.

A top-flight pattern maker, 69, who retired from the payroll in 1921 to take casual employment and returned to a steady job "for the duration" in December.

A worker pensioned in 1931 after 20 years service, who returned to the shop as an apparatus wireman a year ago.

Thus, by the end of 1941, some 2,188 workers

had been added to production payrolls in the works and further increases, of course, have occurred since then.

On the physical side, the two big empty buildings were cleaned out and turned over to Navy turbine and gun mount manufacture and new construction is on its way.

Many of the old machines, especially in the transportation meter plant, have been found adaptable to war production, particularly in the howitzer department.

Thus, gisholt turret lathes formerly used in making commutator shells and caps now are busy roughing and finishing gun bores prior to honing.

A vertical slotter designed for slotting brush holders for AC motors now is slotting the opening in breech rings for breech blocks.

Engine lathes formerly roughing and finishing armature shafts now are threading and facing breech rings.

A shaper for shaping of miscellaneous motor parts now is cutting segments of threads on the end of the gun tubes.

An American turning lathe formerly roughing and finishing armature shafts now is turning the outside diameter of gun tubes.

On the other hand, much new machinery has been necessary and here the company has used its available tooling facilities literally to act as subcontractor for tool companies working on its own machine tool orders.

In this manner, officials boast of speeding production of the Navy turbines by three months.

To get into production, among new machinery needed were 34 boring mills and lathes from an Ohio tool company already overloaded with orders from war plants. Delivery prior to October, 1941, seemed impossible until the electric company discovered it could machine some parts for both lathes and boring machines in its own shops, ship them back to Ohio for assembly on the machines, and chop three months off the delivery date.

An executive of the company summed up its effort—

"We have attacked the problem of converting to war work with the knowledge that we must use every possible resource, every possible employee, old and new, every existing machine and facility, and every new machine we can lay our hands on if we're to get the job done fast.

"At the same time, we have tried to keep in mind our obligation to workers whose skills are not adapted to the machinists' craft by helping them fit themselves for a new type of job.

"In addition, we have sought to protect the seniority of all workers transferring to the new departments.

"With this background of experience to guide us in the future, I think our employees will suffer far less than they otherwise would have when refrigerator production finally is shut down entirely on April 30."

AIR RAID SHELTER VENTILATION

A new branch of ventilation that has come prominently to the fore during recent times is that of air raid shelter ventilation.

The home office regulations dealing with this matter define "air raid shelter" as meaning protection otherwise than by war-like means or by any article of apparel, from hostile attack from the air, and "an air raid shelter" as being any premises, structure or excavation used or intended to be used to provide air raid shelter.

Shelters may vary in size and capacity from half a dozen people to several thousand and in design from a plain concrete structure at

Condensed from a paper by C. Gordon Huntley in the Journal of the [British] Institution of Heating and Ventilating Engineers.

ground level to a most elaborate deep level shelter or series of shelters incorporating lavatories, control rooms, alternative systems of electric supply, heating, lighting and air conditioning, together with full protection against poison gas.

The regulations stipulate that any shelter accommodating more than 12 persons must be mechanically ventilated if for every person:

The floor area is less than 6 sq. ft.

The cubic capacity is less than 50 cu. ft.

Where permanent sealing against gas obtains, the air allowance is 150 cu. ft. air per person per hour if the above floor area ratios, etc., are not exceeded or 450 cu. ft. air per person per hour if they are exceeded. In the case of shelters accommodating less than 12 persons, the above figure of 6 sq. ft. per person may generally be reduced to 3¾ sq. ft.

For shelters containing 25, 50, or 100 persons, electric-with-manual unit sets can, with advantage, be used but for shelters having above this capacity, combination fan and motor units with distributing duct-work is recommended.

One ARP shelter, the ventilation for which has been designed by the author, has capacity for accommodating 2000 persons, the shelter being formed as sub-basement to a large block of new offices. The construction of the shelter is calculated to be sufficiently strong as to withstand a direct hit on the office premises above, resulting in complete collapse of the eight story office building above. In another case, the shelter has capacity for 5000 to 7000 persons, and comprises a series of deep level tunnels, suitably sectionalized and connecting with the various works buildings they are designed to serve. In both cases, adequate mechanical ventilation has been provided for and all the necessary home office precautions taken to meet emergencies.

Detailed designs or data cannot, for obvious reasons, be given, but tests carried out on many shelters of widely different design and capacities have amply demonstrated the home office regulations as giving satisfactory comfort conditions under the most adverse circumstances.

This applies to the purely mechanical, as well as the electric-with-manual installations.

The lighting restrictions caused by ARP regulations have resulted in many complications arising with regard to the effective ventilation of buildings such as power station engine rooms, foundries, gas works, retort houses, large machine and erection shops in engineering works, etc.

It is quite a usual practice in such places as just enumerated, either to provide air movement by extract or fresh air inlet fans with natural inlet or outlet as the case may be, through open windows or doors. ARP restrictions prevent the use of such natural means and a very satisfactory solution has been found in the adoption in window spaces of electric propeller supply or extract fans combined with a special light shield consisting of light restricting baffles and similar in construction to the light shield used in normal ventilation work for photographic dark rooms.

Such light filters offer practically no resistance to the normal flow of air and their adoption has been proved a complete success in a number of installations.

CAMOUFLAGE IN CIVIL DEFENSE—

A New Field for the Architect

Aerial warfare has opened a new and very important field for the architect—the camouflaging of buildings. To enable him to better carry out the idea in civil defense, paint manufacturers have co-operated and produced camouflage paints that are heat deflecting and infra-red resistant. Where ordinary paint appears black in infra-red photography, the "L-Series" of the new camouflage paint appears light.

In a recent talk at the California Palace of the Legion of Honor, San Francisco, J. Francis Ward, director of the Air Raid Protection Advisory Board of the State Association of California Architects, stated that camouflage has developed from haphazard painting of patchwork designs to large scale concealment projects, involving the use of many techniques in color, camouflage paint, foliage and deceptive lighting. Mr. Ward said in part:

"Camouflage in civil defense, as distinct from military camouflage, is concerned with the concealment of existing vital buildings and equipment and with the planning of new projects so that they incorporate the features that are so costly to achieve in existing structures.

"The architect, through his peacetime training and experience in directing the activities of structural and lighting engineers, painters and landscape architects, is particulaly fitted to direct camouflage work. For camouflage, like wartime building generally, follows the same pattern and presents the same planning problems as peacetime projects."

The accompanying pictures of a model factory and surrounding terrain, show the effects

Figure 1

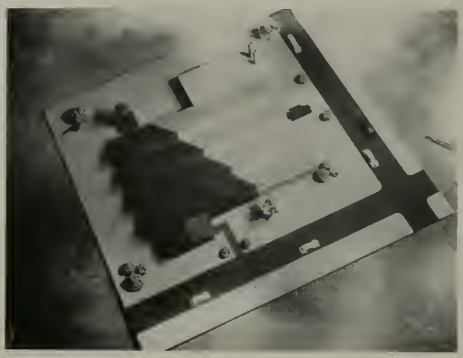


Figure 2

of infra-red photography on new army tested heat-deflecting camouflage paints.

Fig. 1 shows the model as it appears to the naked eye (or photographed with panchromatic film). Ordinary paint was used to cover portions of the model and the colors matched with the new "L-Series" camouflage paint on the remaining portions. Fig. 2 shows the result of the same view taken with infra-red photography. Ordinary paint appears black, emphasizing the targets. "L-Series" which deflects the infra-red appears light—the same reaction as natural terrain.

No attempt has been made at disguising any of the objects as this is merely a demonstration of paint reaction to modern aerial photography methods.

The photographs were released by the Premier Oil & Lead Works, Los Angeles, developers of the new camouflage paint.

GOLD RUSH HOUSE

(Continued from Page 25)

but these were replaced, after forty years of continuous service, by the present galvanized iron roof especially made to match the Etruscan cornice and window hoods which are still in excellent state of preservation. The interior furnishings, imported from Paris, are of hand carved curly black walnut, inset with medallions of exquisite design and workmanship. The furnishings match perfectly the moulded ceilings which defy reproduction by our most skilled plasterers today. The walls are richly hung with lovely paintings depicting the beauties of surrounding scenes of hill and wood, handsomely mounted in ornate frames covered with solid gold leaf. Between the outer windows of what was in those days called the "parlor," is a French mirror in a gold covered frame of superb design and cratsmanship.

Travelers to Carson City are invited to visit this old landmark still occupied by Rinchel Mathias, Jr., and his sister, Louise, two of the six children of Mathias Senior and Marcella Coffey. The State of Nevada has given the old place official recognition by photographing it outside and inside, the pictures to be preserved for their historical interest to future generations.

AIR RAID SHELTER

(See illustration on the right)

A new type of air raid shelter that offers protection from the effects of gas and demolition bombs is being manufactured for the use of industrial workers as well as members of the armed forces. Tests by the War Department demonstrate that this type of structure is highly resistant to splinters, blasts, shrapnel, debris from falling buildings and earth shock.

In these severe tests huge demolition bombs were detonated statically anywhere from 10 to 30 feet away from the shelter. When a 600-pound bomb was exploded only 10 feet away damage was relatively light and yet the resulting earth crater had a surface diameter of 35 feet, a bottom diameter of 13 feet and a depth of eight feet.

Engineers of the Armco Drainage Products Association, Middletown, Ohio, designed the shelter to provide protection from bombs falling not closer than 25 feet. It may be installed in the open, in a hillside or in connection with an office or factory. When the shelter is to be used with a building it is so placed that people may enter from their work.

Whatever the conditions may be at least three feet of earth should cover the shelter. Earth shock tends to lift rather than crush the shelter when it is installed with its mid-diameter slightly above the natural ground level.

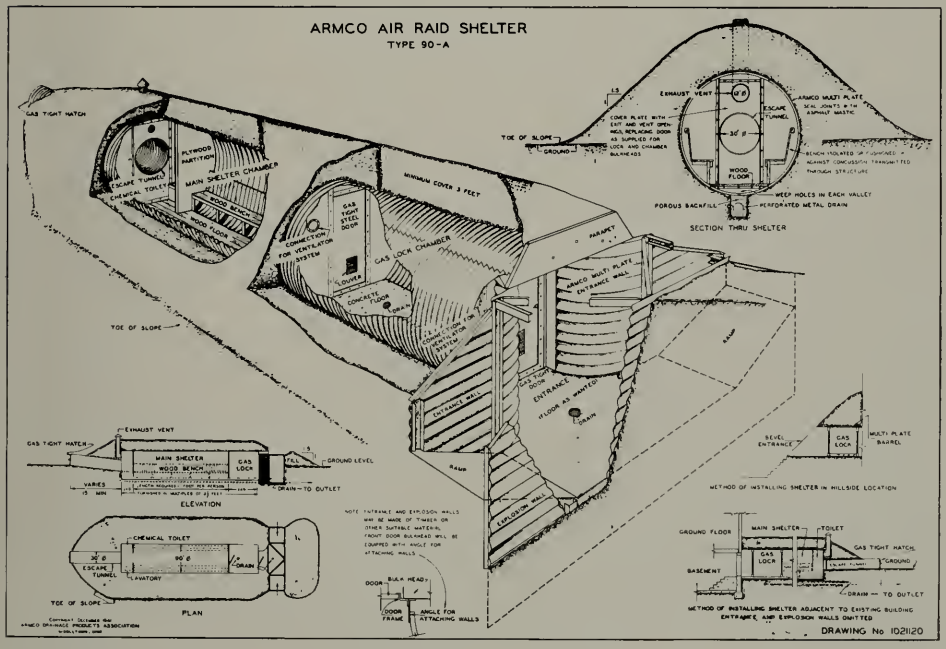
The Armco shelter is intended for 50 persons, the largest number recommended by the Office of Civilian Defense. The structure is 50 feet long and seven and one-half feet high, but may be extended or shortened. Design is flexible and the standard metal sections come in multiple lengths of two and one-half feet. Each foot of structural length provides seating space for one person.

The same type of curved and corrugated steel sections that form the main portion of the sturdy shelter have been used successfully for bridges and other large drainage structures. The shelter design shows the foresight of modern industry in adapting its products to war-time needs even though the use of steel for civilian shelters may be restricted.

Cost of the shelter does not include flooring, walks, toilet facilities, ventilating, air conditioning and lighting equipment or other interior furnishings, all of which can be purchased locally. Provision for this equipment has been considered in the design.

A gas lock may be made an integral part of the shelter or added later without loss of material. The main section is made gas- and water-tight by sealing the

This Armco iron air-raid shelter is 50 ft. long and 7½ ft. high and will accommodate 50 persons. Four unskilled workmen can erect the shelter with simple tools in a few hours.



joints with a special mastic. An escape tunnel is protected by a gas-tight hatch while a gas-tight steel door guards the entrance.

Occupants may leave through the 30-inch escape tunnel if debris blocks the entranceway. A canopy shields the door from falling debris while explosion walls shield the entrance from a frontal blast. Explosion walls or barricade may be installed parallel to the entrance walls so that shelter users may enter from two sides. These barricades also may be placed in such a way that there is one entrance at the front and another at the rear. Tests have shown that side blasts tend to pass through the entrance walkways with relatively light pressure.

Four unskilled workmen can erect the shelter with simple tools. No special equipment is required and materials can be carried in a light truck.

CONSTRUCTION PLANNERS, INC.

Los Angeles architects and engineers, alive to prevailing conditions which auger none to well for their respective professions, as practiced individually, have incorporated the "Construction Planners" with officers as follows:

President, Walter R. Hagedohm; Vice President, Julian C. DeConly; Secretary, Rowland H. Crawford; Treasurer, George E. Gable. Board of Directors, Walter R. Hagedohm, architect; Thomas Cooper, civil engineer; Harold P. King, structural engineer; J. R. Wyatt, mechanical engineer; Julian C. DeConly, electrical engineer; Ralph D. Cornell, landscape engineer; Representing membership at large, Rowland H. Crawford, George E. Gable, Vincent Palmer, E. Allan Sheet, Winsor Soule.

Explaining the purpose of the organization, Walter R. Hagedohm writes:

"At a meeting of the Southern Section of the State Association of California Architects, an organization representing all of the licensed architects in Southern California, there was discussed the feasibility of placing at the call of our National Government a complete mobilization of all of the technically trained men of the profession, together with and including structural engineers, civil engineers, mechanical engineers, and landscape architects, and from this desire to become an integral part of a branch of National Defense in the present emergency, Construction Planners, Inc., a California corporation, was born. We have coordinated into a responsible agency to which Government Divisions can allocate with confidence construction planning projects necessary in the present crisis.

"The members of the professions enumerated are leaders in their individual field of endeavor in Southern California, and the Corporation is so organized as to definitely be able to handle every phase of construction contemplated at this time, together with any and all post-war projects. The members of our staff are all men trained and qualified and available to efficiently and without delay consummate any construction job.

"In the set-up of our organiaztion, we have a complete and thorough record of the background, ability and integrity of each and every member of the organization and are able to present credentials and substantial references applicable to each individual. The facilities of our Corporation enable us to plan and supervise any type of construction work, no matter how large, with maximum speed, accuracy, and economy.

"We will appreciate any consideration that you extend our organization through your medium of Architect & Engineer."

BILL "S. 1617" NOT KILLED

The Post-War Planning Bill, H.R. 5638, companion bill to S. 1617, was defeated in the House in February. The defeat of this bill was a considerable surprise to all, including the National Resources Planning Board, Public Works Reserve and the sponsors of the bill in Congress. The debate on the bill was surprising and the defeat regrettable. Probable reason was the realization by Congress that we do not yet know the immediate course the war may take and have no true conception as to its duration, and until the progress of the war is a little clearer it will be premature to discuss post-war planning. Furthermore, the bill as drawn was permissive of abuse. Post-war planning is not forgotten—it will be a thing of the future, but before it can be properly considered better draft of legislation than that proposed will have to be produced.—The Octagon.

Companion Bill S. 1617, alluded to in the March issue, is still pending in the House. The purpose of this Bill, as and when passed, is to provide money for allotment to Federal, State, and Municipal Agencies, etc., to be used "for the making of such examinations, surveys, investigations, legal studies, comprehensive plans and programs, engineering plans and specifications, etc., as may be necessary to facilitate and expedite the selection, financing, and inauguration of public improvements, etc." It is provided that such advances to these agencies shall be "subject to such requirements as to reimbursement, or with respect to contribution of funds, services, or materials, as the President may determine."

As and when this Bill is passed it will be possible, under the conditions prescribed, to have funds available with which to aid the municipalities, among other agencies, in financing planning programs in preparation for post-war projects under the Public Works Reserve.

OPEN SAN FRANCISCO OFFICE

Messrs. Franklin & Kump, architects of Fresno and Bakersfield, have recently opened offices at 251 Kearny Street, San Francisco, from which they will direct operations of their Bay area work. The Fresno and Bakersfield offices will be continued as usual.

ARCHITECTS' BULLETIN

Issued For

THE STATE ASSOCIATION OF CALIFORNIA ARCHITECTS

Northern Section

STATE ASSOCIATION MEMBER
OF THE
AMERICAN INSTITUTE OF ARCHITECTS

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Harris C. Allen

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ARCHITECTS AND THE WAR

The profession is faced with the fact that private construction is limited to war needs. In this field, architects must needs combine with contractors to do Defense Housing, and (for the new firms adequately organized) privately financed Defense Plants. A number of architects are engaged in projects of various sizes to construct single or multi-family dwelling units, for sale or rent (or both).

In the field of public construction, some architects are combining with engineers and contractors on the new form of "A.E.M." (Architect-Engineer-Management) contract.

Many of the younger architects are going into Army or Navy service, in one capacity or another.

There remain a number of older architects who will be seriously affected in their professional practice. Some of them may be able to find occupation in other branches of public service; some will have sufficient invested income to carry on; and for some, conditions are going to be very hard.

The situation will require great patience and fortitude, with the sustaining hope that the resumption of building after the war will bring work for all. For those who will have time to spare now, it is desirable—in fact, imperative—that the post-war program be carefully studied, in conjunction with our delayed but now recognized program for city and regional planning, "Urban Redevelopment," or "Urban and Rural Land Use."

A.I.A. — S.A.C.A.

Arrangements have been made for the Northern California Chapter of the Institute and the State Association of California Architects, Northern Section, to share offices, which will continue at the well-known old stand at 557 Market Street, San Francisco. The location has always been readily identified by the occupation of the main part of the building by the Building Material Exhibit. Our efficient and courteous office secretary, Miss Ashton, will be in charge for both organiaztions.

Architect-Engineer Contract

A new type of army building contract, which is expected to save millions of dollars in construction costs, has been prepared by the War Department.

M. J. Madigan, special adviser on construction to the Undersecretary of War, said the new contract form, known as an architect-engineer-manager contract, "makes a virtue of subcontracting," unlike the cost-plus-fixed-fee contract, under which most of the large army camps, industrial and ordnance plants were built in the current program.

Under the new system the prime contractor is a manager for the War Department, doing the engineering work and some of the actual construction,

but recommending subcontracts for as much as 40 to 50 per cent of the work.

In such cases the subcontracts are awarded, not by the prime contractor, but directly by the army district engineer responsible for general supervision of the entire project.

Fees for the architect-engineer-manager are based on the cost of the project, the length of time required and the technical difficulties involved.

NORTHERN CALIFORNIA CHAPTER

The regular monthly meeting of Northern California Chapter, A.I.A., was held at the St. Francis Yacht Club in San Francisco Tuesday, February 24, President A. Appleton presiding.

Guests present included Miss Olive Jordan, architect of New York; Ernest P. Goodrich, Planning Consultant to the San Francisco Planning Commission; Messrs. Mark Jorgensen and George Melville, Secretary and Planning Engineer respectively of the Planning Commission; William C. Hague, Secretary of the Associated General Contractors and the Building Industry Conference Board; John Kent, son of Thomas Kent; and the following members of the Producers' Council Club: Messrs. Gano Baker, president; John Schaumberger, secretary; L. Kraft, L. Saylor and Clarke Wayland.

After the introductions were completed President Appleton called upon Gardner Daily, Chairman of the Citizens' Committee for the Master Plan, mentioning with praise his recent contribution to the war effort entitled "Barracks for Shipment." Mr. Dailey in turn introduced the guest speaker, Mr. Ernest Goodrich.

The topic for the evening being the Master Plan for San Francisco, Mr. Goodrich first outlined the problem in a general way, stressing the unique difficulties presented by this city's unusual grid plan and the serious fire and bomb hazards resulting from the unbroken rows of twenty-five foot houses. He explained theories regarding the "ideal city" which should be compact, inexpensive to operate, with "concentrically decreasing height limits" and with "values decreasing inversely proportionate to the time of travel to the center."

Mr. Goodrich recalled how the Chinese, some years ago, rejected his proposal for a fine civic center in Nanking on the grounds that it was too vulnerable to disaster or attack, and adopted a policy of decentralization of vital functions.

Following a general discussion of the subject, Mr. Goodrich concluded that "we must make use of what we have first." The meeting was brought to a close with President Appleton pointing out that the architects of this region, having to live and work under the conditions existing at present and trained in the fundamentals of good planning, were vitally interested in the success of the Master Plan and would from time to time require that the City Planning Commission consult with them in order that a practical and acceptable solution be reached.—W. H. K.

SOUTHERN CALIFORNIA CHAPTER, A.I.A.

A round table discussion of Long Range Planning featured the March meeting of the Southern California Chapter, American Institute of Architects at the Clark Hotel in Los Angeles. Sumner Spaulding, chairman of the committee which arranged the meeting, led the discussion, which was joined in by Paul Hunter, Ben Parker, Richard Neutra, Roy Kelley and others.

Cities of the future, the discussion brought out, must look not only to existing transportation facilities, but also to the air as a commonplace means of short travel. Continued development of the system of freeways, of which the Arroyo Seco Parkway was cited as an outstanding example, was urged. Ralph Flewelling pointed out that only 14 per cent of present shipyard workers live in the harbor area. He said that a properly planned industrial area could provide living facilities for approximately 38,000 families within a two-mile radius of a major factory. This would allow ample automobile parking space immediately adjacent to the highway. Of the remaining area 5 per cent would be made into parks, 3 per cent would be devoted to sites for retail establishments, 3 per cent would be used for educational institutions, and the balance would be utilized for housing.

Architects were cautioned by Werner Ruchte, of the Regional Planning Commission, to remember they were living in a practical world where the architect's final plan was largely dictated by his necessity of pleasing clients. Mr. Ruchte cited recent housing projects and buildings in the Civic Center as praiseworthy examples of orderly planning.

A brief report on the Chapter's Civil Defense Committee was made by Herbert Powell who said a new series of lectures, combined with case studies on air raid protection, is scheduled to begin shortly. Meetings will be held under the auspices of the University of Southern California.

Short talks on the work being done in airplane manufacture were given by Charles Crispin and John Treacy of the Production Engineering Department of the Douglas Aircraft Company. Chapter members were told there is a definite need in this field for trained men.

Samuel Lunden, who presided, read excerpts from a letter from Henry Carleton Newton, Los Angeles architect who is now serving as Plans and Operations Officer with the U. S. Army. Mr. Newton expressed the hope that he would soon be transferred to the West Coast.

PRIORITIES REGIONAL DIRECTOR

Prominent in the fields of engineering and finance, James B. Harvey, one-time consulting engineer in San Francisco, has assumed his new post as regional director of the priorities field service in the Pacific area, with headquarters in San Francisco.

Harvey will have jurisdiction over the eight priorities field offices in eleven western states.

MODERNIZED PRODUCTS

Brief Notes on New Materials and Equipment in the Building Industry.

677. GLASS PRODUCTS

Products that might readily prove to be substitutes or alternates for critical war materials are constantly being sought in research laboratories. A pamphlet issued by Pittsburgh Plate Glass Co. tells the part this company is playing in this transition. Extremely well composed and interesting.

678. SASH CORD

Replacing the sash cord is probably one of the most dreaded of jobs. The new "Zip-In-Sash Cord" can be installed without removing the sash from the window frame, without even taking down the shades, blinds or curtains. Nothing is scratched or marred. Literature on request.

679. GARBAGE GRINDER

This is a sink attachment and has proven to be a useful home appliance. As the literature says, "Quick as a Wink in any Sink." Your clients will appreciate your suggesting this installation, for it eliminates bothersome garbage disposal.

680. SKYLIGHTS

Here in one booklet is plenty of information on skylights and skylight construction. And to help you, there are detailed drawings and specifications for various types. Issued by the American 3 Way-Luxfer Prism Co. It's a splendid addition to your files.

681. FIREPLACES

To our best knowledge, no treatise on fireplaces contains as much information as the ninth revision of the "Donley Book of Successful Fireplaces." It is replete with both technical and illustrative material. Sixty-four pages. Free to architects. To others, send 25 cents.

682. IRON PIPE, ETC.

"Soon after the war program got well under way, a lot of good customers took it for granted they couldn't get our products," the A. M. Byers Co. advise. "So we decided to get out a new catalog and it has all the information on things we're making today." Send for your copy.

683. PAINT

A new handy means of selecting the best paint without detailed technical study of properties of all finishes that might be suitable for a given application, is provided in the Valdura Paint Selector, issued by the American-Marietta Co. A copy free on request. Check the coupon for yours.

684. DRAFTING PENCIL

A new mechanical drafting pencil with a motor-driven lead pointing machine for engineers, architects and mechanical draftsmen, is announced by the Tec Pencil Co. Circulars describing these new items, together with samples of Tec drawing leads, may be had by checking the coupon. Made in California.

685. BLACKOUT PRECAUTIONS

An educational folder describing permanent blackout methods used in the London blitzkrieg, is being distributed by Celotex Corporation. The folder is designed to help architects and contractors render intelligent service to their clients in areas where blackout precautions are necessary.

686. METALS

This handy and elaborate "sampler" gives you some essential information concerning electro-plated metals and how they can be used, by means of a chart shows how they can be used to conserve more strategic metals for vital war production. Issued by American Nickeloid Co. One of the best pieces of promotion of the month.

687. ROTARY SWITCH

A new double-break direct-acting rotary switch for control of circuit breakers has been developed by the Roller-Smith Co. and is described in a new booklet which engineers will want to preserve.

688. KNOTTY PINE

Western Pine Association comes out with a colorful booklet showing interior adaptations of knotty pine wood. It is titled "Western Pine Camera Views." Write for your copy.

689. OIL BURNERS

Engineers interested in large oil-burning installations will find the latest release of the "Ray Reporter" (Ray Oil Burner Co.) particularly good. It gets into some technical discussions, but is largely informative and good reading. Ask for the "seventh issue."

690. PAGING SYSTEM

A new two-way communication system, permitting paging messages to be originated from any station and broadcast to all stations, with added features of private, two-way telephone conversation, has recently been announced by Executone, Inc. Literature free on request.

691. ASBESTOS-CEMENT BOARD

An asbestos-cement board of the type being used extensively in army cantonments, industrial plants, etc., has been added to its building material line by the Celotex Corporation. Information will be sent on request.

692. VENTILATION

Here is another good folder on built-in ventilation, applying to kitchen use in the home. Issued by Victor Electric Products, Inc., it carries specifications, as well as illustrations, and shows particular features of the Victor line.

Architect and Engineer
68 Post Street
San Francisco, Calif.

Please send me literature on the following items as checked below. This request places me under no obligation.

677 ☐	685 ☐
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My Name.....

Name of Company.....

Street.....

City.....State.....

NEW DEFENSE HOUSING PROGRAM

Construction of an additional 350,000 dwelling units for war industry workers, more than doubling the original defense housing program, is announced by the National Housing Agency.

One hundred and fifty thousand of the newly-approved units will be erected by Federal agencies, while the remaining 200,000 will be privately financed.

In addition to high preference ratings, every other available assistance will be given to contractors to assure delivery of essential materials.

The maximum permitted charges for housing erected with priority assistance remain at a $50 rental per unit per month, or a price of $6,000 per family dwelling, if for sale. At least 100,000 of the new privately financed dwellings will be for rent, and will be so spaced as to provide rental housing in every certified defense area, in quantities based on expected immigration of war workers and estimates from the labor requirement figures of war industry plants.

In addition, the following conditions must be met by owners:

(1) Exclusive preference for all housing for which priority orders are issued shall be given to defense workers. Such preference shall be in effect for at least 30 days after date of completion.

(2) Housing erected under priorities for rental shall be actually for rental, but houses which are sold under a lease-option-to-buy contract, under which the purchaser is given at least 30 months in which to pay his down payment, is under no obligation to purchase during said period, and whose total monthly payments are equal to or less than rent for equivalent accommodations, shall be included in the allocation for rental units.

(3) Applicants for priorities shall specify the rent to be charged on any dwelling. The type of housing to which priorities are granted should in each area be such as to provide shelter for defense workers at a rate not to exceed 20 percent of the estimated annual earnings of such workers, as pre-determined in the locality program report.

(4) Specified rents shall be in effect for a minimum term of one year.

In a housing development in the San Francisco East Bay area, A. T. Becket of the Becket and Federighi contracting firm of Oakland has announced that construction of a 420-unit defense housing project on Davis street, San Leandro, will start immediately.

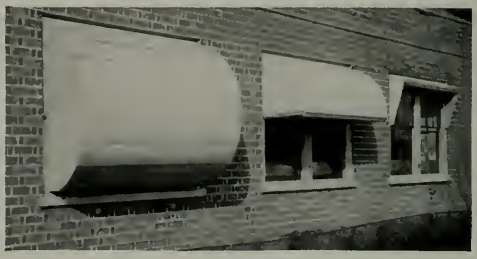
The units will be five-room, separate homes priced at $4500 each. Entire cost of the project, to be located on a 70-acre plot south of the Caterpillar Tractor Company, will be $1,800,000.

In Alameda, City Manager Charles Schwanenberg has announced the Government will be asked to enlarge the Woodstock Village housing project in West Alameda by about 200 units, doubling its present size.

NEW BLACKOUT AWNING

A new practical answer to the blackout problem for industrial, commercial and residential buildings is seen in the introduction of the "Meta-Fold," metal, blackout awnings, designed and manufactured by the Acklin Stamping Company, Toledo, Ohio.

According to F. C. Greenhill, sales manager, these sturdily constructed metal awnings, which are installed on the exterior of a building, are operated as simply as



Blackout awning down and up

the old-time roll top desk. For sunlight protection, the metal awning can be lowered half-way. For complete blackout, the awning is fully lowered.

To conserve space when the awning is raised, it has been designed in segments of "galvannealed" steel that nest together in a telescopic manner. Each segment is sealed from the other by a light-proof, noise-absorbent gasket. The entire awning is rust-proof and fire-proof, and can be provided with an inside lock.

Among other advantages that are claimed for this product are elimination of telltale reflection from the moon and other outside light at night; permanence of the installation which requires no seasonal taking down and storing; full use of daytime light; no restriction of daytime ventilation; and neatness and attractiveness of appearance.

There is also a definite morale value in the feeling of security and confidence created among workers by this evidence of efficient preparedness, Mr. Greenhill declared. Experience in England has shown that ruthless economy in the blackout of windows in industrial buildings works adversely in that it undermines the efficiency of workers with resulting loss of production.

STRUCTURAL ENGINEERS VISIT STANFORD

The last meeting of the Structural Engineers of Northern California was held at Stanford Union, Stanford University, Palo Alto, when Professor L. S. Jacobsen, acting head, Department of Mechanical Engineering at the University, gave an interesting talk and demonstration of items recently developed in the vibration laboratory. Members found Professor Jacobsen's lecture highly informative, and the dinner, as well as the lecture, was voted a huge success. Most of the San Francisco engineers made the trip to Palo Alto and back by Southern Pacific train.

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

Estimator's Guide

Giving Cost of Building Materials, Wage Scale, Etc.

Amounts given are figuring prices and are made up from average quotations furnished by material houses to San Francisco contractors. 3% Sales Tax on all materials but not labor.

All prices and wages quoted are for San Francisco and the Bay District. There may be slight fluctuation of prices in the interior and southern part of the state. Freight cartage, at least, must be added in figuring country work.

Bond—1½% amount of contract.
Government work ¾%.

Brickwork—

Common, $40 to $45 per 1000 laid, (according to class of work).

Face, $90 to $100 per 1000 laid, (according to class of work).

Brick Steps, using pressed brick, $1.00 lin. ft.

Brick Veneer on frame buildings, $1.00 sq. ft.

Common f.o.b. cars, $15.00 at yard. Cartage extra.

Face, f.o.b. cars, $40.00 to $60.00 per 1000, carload lots.

Building Paper—

1 ply per 1000 ft. roll	$3.50
2 ply per 1000 ft. roll	5.00
3 ply per 1000 ft. roll	6.25
Sisalkraft, 500 ft. roll	5.00
Sash cord com. No. 7	$1.20 per 100 ft.
Sash cord com. No. 8	1.50 per 100 ft.
Sash cord spot No. 7	1.90 per 100 ft.
Sash cord spot No. 8	2.25 per 100 ft.

Sash weights, cast iron, $50.00 ton.
Nails, $3.50 base.
Sash weights, $45.00 per ton.

Concrete Aggregates—

GRAVEL (all sizes) $1.45 per ton at bunker; delivered to any point in S. F. County $1.85.

	Bunker	Delivered
Top sand	$1.45	$1.85
Concrete mix	1.45	1.85
Crushed rock, ¼ to ¾	1.60	2.00
Crushed rock, ¾ to 1½	1.60	2.00
Roofing gravel	1.60	2.00
City gravel	1.45	1.85
River sand	1.50	1.90

Bank sand—$1.00 per cubic yard at bunker or delivered.

SAND—	Bunker	Delivered
River sand	$1.50	$1.85
Lapis (Nos. 2 & 4)	2.00	2.40
Olympia Nos. 1 & 2	1.80	2.20
Healdsburg plaster sand	$1.80 and $2.20	
Del Monte white	50c per sack	

Common cement (all brands, paper sacks) carload lots $2.52 per bbl. f.o.b. car; delivered, $2.80; less than carloads delivered, 70c per sack.

Cash discount on carload lots, 10c a barrel, 10th Prox.; cash discount less than carload lots, 2%.

Atlas White, Calaveras White, Medusa White — 1 to 100 sacks, $2.00 sack, warehouse or delivery.

Forms, Labors average $40.00 per M.
Average cost of concrete in place, exclusive of forms, 35c per cu. ft.; with forms, 60c.
4-inch concrete basement floor ..... 12½c to 14c per sq. ft.
Rat-proofing 7½c
Concrete Steps..... $1.25 per lin. ft.

Dampproofing and Waterproofing—

Two-coat work, 20c to 30c per yard.
Membrane waterproofing—4 layers of saturated felt, $4.50 per square.
Hot coating work, $2.00 per square.
Medusa Waterproofing, 15c per lb., San Francisco Warehouse.
Tricocel waterproofing.
(See representative.)

Electric Wiring—$12.00 to $15.00 per outlet for conduit work (including switches). Knob and tube average $3.00 per outlet.

Elevators—

Prices vary according to capacity, speed and type. Consult elevator companies. Average cost of installing an automatic elevator in four-story building, $2800; direct automatic, about $2700.

Excavation—

Sand, 60 cents; clay or shale $1 per yard.
Teams, $12.00 per day.
Trucks, $22 to $27.50 per day.
Above figures are an average without water. Steam shovel work in large quantities, less; hard material, such as rock, will run considerably more.

Fire Escapes—

Ten-foot galvanized iron balcony, with stairs, $150 installed on new buildings; $160 on old buildings.

Floors—

Composition Floors—22c to 40c per sq. ft.
In large quantities, 18c per sq. ft. laid.
Mosaic Floors—80c per sq. ft.
Duraflex Floor—23c to 30c sq. ft.
Rubber Tile—50c to 75c per sq. ft.
Terazzo Floors—45c to 60c per sq. ft.
Terazzo Steps—$1.60 lin. ft.

Hardwood Flooring (delivered to building)—

	13/16x2¼" T&G	⅜x2" T&G	⅝x2" Sq.Ed.
Clr. Qtd. Oak	$144.00 M	$122.00 M	$141.00 M
Sel. Qtd. Oak	118.00 M	101.00 M	114.00 M
Clr. Pla. Oak	120.00 M	102.00 M	115.00 M
Sel. Pla. Oak	113.00 M	92.00 M	107.00 M
Clr. Maple	125.00 M	113.00 M	

Wage—Floor layers, $12.00.
Note—Above quotations are all board measure except last column which is sq. ft.

Glass (consult with manufacturers)—
Double strength window glass, 20c per square foot.
Plate 80c per square foot (unglazed) in place, $1.00.
Art, $1.00 up per square foot.
Wire (for skylights), 40c per sq. foot.
Obscure glass, 30c to 50c square foot.
Glass bricks, $2.50 per sq. ft. in place.
Note—if not stipulated add extra for setting.

Heating—
Average, $1.90 per sq. ft. of radiation, according to conditions.
Warm air (gravity) average $48 per register.
Forced air, average $68 per register.

Iron—Cost of ornamental iron, cast iron, etc., depends on designs.

Lumber (prices delivered to bldg. site)—

No. 1 common	$43.00 per M
No. 2 common	41.00 per M
Select O. P. common	46.00 per M
2x4 No. 3 form lumber	32.00 per M
1x4 No. 2 flooring VG	90.00 per M
1x4 No. 3 flooring VG	85.00 per M
1x6 No. 2 flooring VG	96.00 per M
1¼x4 and 6, No. 2 flooring	95.00 per M

Slash grain—

1x4 No. 2 flooring	$65.00 per M
1x4 No. 3 flooring	62.00 per M
No. 1 common run T. & G.	48.00 per M
Lath	7.50 per M

Shingles (add cartage to price quoted)—

Redwood, No. 1	$1.20 per bdle.
Redwood, No. 2	1.00 per bdle.
Red Cedar	1.45 per bdle.

Plywood—Douglas Fir (add cartage)—
"Plyscord" sheathing (unsanded)
⅜" 3-ply and 48"x96" ..... $39.75 per M
"Plywall" (wallboard grade)—
¼" 3-ply 48"x96" ..... $43.70 per M
"Plyform" (concrete form grade)—
⅝" 5-ply 48"x96" ..... $117.30 per M
Exterior Plywood Siding—
⅜" 5-ply Fir ..... $132.00 per M
Redwood (Rustic) 1"x8" clear heart.. $ 95.00 per M
$5 less per M for A grade.

Millwork—Standard.
O. P. $100 per 1000. R. W. rustic $120.00 per 1000 (delivered).
Double hung box window frames, average with trim, $6.50 and up, each.
Complete door unit, $10.00.
Screen doors, $3.50 each.
Patent screen windows, 25c a sq. ft.
Cases for kitchen pantries seven ft. high, per lineal ft., $8.00 each.
Dining room cases, $8.00 per lineal foot. Rough and finish about 75c per sq. ft.
Labor—Rough carpentry, warehouse heavy framing (average), $17.50 per M.
For smaller work average, $35.00 to $45.00 per 1000.

Marble—(See Dealers)

Painting—

Two-coat work	per yard 50c
Three-coat work	per yard 70c
Cold water painting	per yard 10c
Whitewashing	per yard 4c

Turpentine, 65c per gal., in 5 gal. cans, and 55c per gal. in drums.
Raw Linseed Oil—95c gal. in light drums.
Boiled Linseed Oil—98c gal. in drums and $1.08 in 5 gal. cans.

White Lead in oil

	Per Lb.
1 ton lots, 100 lbs. net weight	11¾c
500 lbs. and less than 1 ton	12c
Less than 500 lb. lots	12½c

Red Lead and litharge

1 ton lots, 100 lbs. net weight	11¾c
500 lbs. and less than 1 ton	12c
Less than 500 lb. lots	12½c

Red Lead in oil

1 ton lots, 100 lbs. net weight	12¾c
500 lbs. and less than 1 ton	13c
Less than 500 lb. lots	13½c

Note—Accessibility and conditions cause some variance in costs.

Patent Chimneys—

6-inch	$1.25 lineal foot
8-inch	1.50 lineal foot
10-inch	2.25 lineal foot
12-inch	3.00 lineal foot

Plaster

Neat wall, per ton delivered in S. F. in paper bags, $17.60.

Plastering—Interior—

	Yard
1 coat, brown mortar only, wood lath	$0.50
2 coats, lime mortar hard finish, wood lath	.85
2 coats, hard wall plaster, wood lath	.72
3 coats, metal lath and plaster	1.25
Keene cement on metal lath	1.30
Ceilings with ¾ hot roll channels metal lath (lathed only)	.90
Ceilings with ¾ hot roll channels metal lath plastered	1.80
Single partition ¾ channel lath 1 side (lath only	.85
Single partition ¾ channel lath 2 inches thick plastered	$2.90
4-inch double partition ¾ channel lath 2 sides (lath only)	1.70
4-inch double partition ¾ channel lath 2 sides plastered	3.30
Thermax single partition; 1" channels; 2¼" overall partition width. Plastered both sides	2.50
Thermax double partition; 1" channels; 4¾" overall partition width. Plastered both sides	3.40
3 coats over 1" Thermax nailed to one side wood studs or joists	1.25
3 coats over 1" Thermax suspended to one side wood studs with spring sound isolation clip	1.45

Plastering—Exterior—

	Yard
2 coats cement finish, brick or concrete wall	$1.00
3 coats cement finish, No. 18 gauge wire mesh	1.75

Wood lath, $5.50 to $6.50 per 1000.
2.5-lb. metal lath (dipped) .19
2.5-lb. metal lath (galvanized) .21
3.4-lb. metal lath (dipped) .22
3.4-lb. metal lath (galvanized) .24
¾-inch hot roll channels, $72 per ton.
Finish plaster, $18.90 ton; in paper sacks.
Dealer's commission, $1.00 off above quotations.
$13.85 (rebate 10c sack).
Lime, f.o.b. warehouse, $2.25 bbl.; cars, $2.15
Lime, bulk (ton 2000 lbs.), $16.00 ton.
Wall Board 5 ply, $50.00 per M.
Hydrate Lime, $19.50 ton.

Plasterers Wage Scale	$1.67 per hour
Lathers Wage Scale	1.60 per hour
Hod Carriers Wage Scale	1.40 per hour

Composition Stucco—$1.80 to $2.00 sq. yard (applied).

Plumbing—

From $100.00 per fixture up, according to grade, quantity and runs.

Roofing—

"Standard" tar and gravel, $7.00 per sq. for 30 sqs. or over.
Less than 30 sqs. $7.50 per sq.
Tile, $20.00 to $35.00 per square.
Redwood Shingles, $7.50 per square in place.
Copper, $16.50 to $18.00 per sq. in place.
5/2 #1-16" Cedar Shingles, 4½" Exposure ..... 8.00 Square
5/8 x 16" — #1 Cedar Shingles, 5" Exposure..... 9.00 Square
4/2 #1-24" Royal Shingles, 7½" Exposure ..... 9.50 Square
Re-coat with Gravel, $3 per sq.
Asbestos Shingles, $15 to $25 per sq. laid.
Slate, from $25.00 per sq., according to color and thickness.
1/2 x 25" Resawn Cedar Shakes, 10" Exposure 10.50
3/4 x 25" Resawn Cedar Shakes, 10" Exposure 11.50
1 x 25" Resawn Cedar Shakes, 10" Exposure 12.50
Above prices are for shakes in place.

Sheet Metal—

Windows—Metal, $1.75 a sq. ft.
Fire doors (average), including hardware, $1.75 per sq. ft.

Skylights—(not glazed)

Copper, 90c sq. ft. (flat).
Galvanized iron, 40c sq. ft. (flat).
Vented hip skylights 60c sq. ft.

Steel—Structural (None available except for defense work)

$150 ton (erected), this quotation is an average for comparatively small quantities. Light truss work higher. Plain beams and column work in large quantities $140 per ton.

Steel Reinforcing (None available except for defense work).

$150 to $200 per ton, set.

Stone—

Granite, average, $6.50 cu. foot in place.
Sandstone, average Blue, $4.00. Boise, $3.00 sq. ft. in place.
Indiana Limestone, $2.80 per sq. ft. in place.

Store Fronts—

Copper sash bars for store fronts, corner, center and around sides, will average $1.00 per lineal foot.
Note—Consult with agents.

Tile—Floor, Wainscot, etc. — (See Dealers)

Asphalt Tile—18c to 28c per sq. ft. installed.

Wall Tile—

Glazed Terra Cotta Wall Units (single faced) laid in place—approximate prices:

2 x 6 x 12	$1.00 sq. ft.
4 x 6 x 12	1.15 sq. ft.
2 x 8 x 16	1.10 sq. ft.
4 x 8 x 16	1.30 sq. ft.

Venetian Blinds—

40c per square foot and up. Installation extra.

Windows—Steel

Factory type sash 30c ft.
Ventilators for steel sash $5.00 each.

1942 BUILDING TRADES WAGE SCALES FOR NORTHERN CALIFORNIA

*6-hour day **7-hour day

CRAFT	San Francisco	Alameda	Fresno	Marin	Sacramento	San Jose	San Mateo	Vallejo	Stockton
ASBESTOS WORKERS	$1.50	$1.25	$1.25	$1.37½	$1.12½	$1.25	$1.25	$1.25	$1.25
BRICKLAYERS	* 1.75	* 1.75	* 1.50	* 1.75	* 1.75	* 2.00	* 1.79-1/6	* 1.75	* 1.75
BRICKLAYERS' HODCARRIERS	* 1.35	* 1.25	* 1.05	* 1.25	* 1.05	* 1.35	* 1.35	* 1.40	* 1.14
CARPENTERS	1.37½	1.37½	1.25	1.37½	1.25	1.25	1.37½	1.25	1.25
CEMENT FINISHERS	1.37½	1.37½	1.25	1.25	1.25	1.50	.....	1.25	1.25
ELECTRICIANS	1.50	1.50	1.50	1.37½	1.50	1.50	1.50	1.50	1.37¼
ELEVATOR CONSTRUCTORS	1.61	1.56	1.50	1.61	1.61	1.50	1.50	1.56	.....
ENGINEERS: Material Hoist	1.50	1.37½	1.25	1.50	1.37½	1.62½	1.37½	1.37½	1.25
Piledriver	1.75	1.60	1.60	1.75	1.75	1.75	1.62½	1.75	.....
Structural Steel	1.75	1.60	1.60	1.75	1.75	1.75	.....	1.60	1.60
GLASS WORKERS	1.25	1.25	1.12½	1.25	1.12½	1.21	1.25	1.25	.....
IRONWORKERS: Ornamental	1.50	1.31¼	1.37½	1.31¼	1.37½	1.31¼	1.25	1.31¼	.....
Reinf. Rodmen	1.50	1.31¼	1.31¼	1.31¼	1.31¼	1.60	1.31¼	1.31¼	1.25
Structural	1.75	1.60	1.60	1.60	1.60	1.75	1.50	1.60	1.37½
LABORERS: Building	.85	.87½	.82½	.81¼	.85	.81¼	.81¼	.81¼	.80
Concrete	.87½	.93¾	.90	.81¼	.92½	.....	.85	.90	.90
LATHERS	* 1.75	* 1.75	* 1.50	* 1.75	* 1.60	* 1.75	* 1.75	* 1.50	* 1.50
MARBLE SETTERS	1.43¾	1.25	1.25	1.31¼	1.37½	1.25	1.31¼	.....	.....
MOSAIC & TERRAZZO	1.00	1.25	1.12½	1.12½	1.15-5/8	1.12½	.....	.....	.....
PAINTERS	** 1.37½	** 1.50	** 1.28-4/7	** 1.37½	1.25	** 1.35-5/7	** 1.42-6/7	** 1.50	1.25
PILEDRIVERS	1.47	1.40	1.40	1.50	1.40	1.47	1.40	1.40	.....
PLASTERERS	* 1.66-2/3	* 1.66-2/3	* 1.75	* 1.66-2/3	1.75	* 2.00	* 2.00	* 1.75	* 1.83-1/3
PLASTERERS' HODCARRIERS	* 1.50	* 1.45	* 1.40	* 1.40	* 1.18¾	* 1.35	* 1.75	* 1.40	* 1.50
PLUMBERS	1.52½	1.50	1.53-1/8	1.50	1.56¼	1.62½	1.50	1.50	1.37½
ROOFERS	1.37½	1.37½	1.12½	1.25	1.25	1.37½	1.25	1.25	1.25
SHEET METAL WORKERS	1.37½	1.37½	1.43¾	1.37½	1.50	1.50	1.37½	1.25	1.37½
SPRINKLER FITTERS	1.50	1.37½	.....	1.25	.....	1.62½	.....	1.50	.....
STEAMFITTERS	1.50	1.50	1.53-1/8	1.50	1.56¼	1.62½	1.50	1.50	.....
STONESETTERS (Masons)	* 1.50	* 1.75	1.50	* 1.75	* 1.75	* 1.50	1.75	* 1.75	* 1.50
TILESETTERS	1.50	1.37½	1.37½	1.37½	1.37½	1.50	1.50	1.37½	.....

Prepared and compiled by
CENTRAL CALIFORNIA CHAPTER, ASSOCIATED GENERAL CONTRACTORS OF AMERICA
with the assistance and cooperation of secretaries of General Contractors Associations and Builders Exchanges of Northern California.

LUMBER BRINGS HIGHER BUILDING COSTS

Although increasing steadily since the war began in September, 1939, building material prices have not sky-rocketed generally as they did during the comparable period of World War I, according to the current issue of the Federal Home Loan Bank Review.

"During World War I, wholesale prices for building materials rose over 50 per cent, even before the United States entered, and when peace returned prices were almost twice as high as in the summer of 1914," the article says. "In the present war, the 27 months before this country's entry saw building materials costs climb about 20 per cent. Prices have continued to move upward since December 7. . . .

"Steel was responsible for much of the sky-rocketing of prices in the first World War. Its cost doubled within 22 months. Next came paint materials and cement, which rose about 60 per cent and 24 per cent respectively. In the past two years, steel and cement have shown practically no advances. Prices for paint materials have risen considerably, but not as far or as fast as in the first World War.

"Lumber rose only 15 per cent in the first 28 months of World War I. In the present war, the soaring of lumber prices has been the largest single factor in the general increase of building costs. In both war periods, brick and tile prices increased at a slower pace than the index for all building materials."

The Review quotes the Bureau of Labor Statistics as attributing contrasting price movements in the two wars partly to the fact that "concentrated industries with limited numbers of producers, as in steel and cement, have shown a tendency to avoid price increases at this time, a restraint conspicuously absent in 1915 and 1916.

"Also, prices for steel and similar basic industrial products were successfully stabilized shortly after the inception of the present defense program," says the Review. "The rapid increase in lumber prices occurred when huge orders for cantonments in 1940 coincided with a heavy demand for residential construction. In the last war there was no comparable cantonment program before 1917, at a relatively late stage, and residential building activity at that time was considerably lower than in the past two years."

Before the spring of 1941, increases in wholesale costs found little reflection in retail prices except for lumber and heating equipment, according to the Review. The more substantial cost advances occurred during the last year and practically within one building season.

Total cost increases for the standard house have varied from 2.4 per cent in Little Rock, Ark., to 41.1 per cent in Dallas, Tex. In 21 of these cities, the increase in labor costs has exceeded the rise in the cost of materials.

W-310 Lavatory

W-640, 6400, 6412, Saranac Closet

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KATE N. KINLEY MEMORIAL FELLOWSHIP

The Board of Trustees of the University of Illinois announces the 11th annual consideration of candidates for the Kate Neal Kinley Memorial Fellowship.

The Fellowship yields the sum of one thousand dollars which is to be used by the recipient toward defraying the expenses of a year's advanced study of the Fine Arts in America or abroad.

Applications should reach the Fellowship Committee not later than May 1. Requests for application blanks and instructions should be addressed to Dean Rexford Newcomb, College of Fine and Applied Arts, Room 110, Architecture Building, University of Illinois, Urbana, Illinois.

NEW PRODUCTION MANAGER FOR KRAFTILE

Graham G. Smith of Oakland has been named ceramist in charge of production of the Kraftile Company, Niles, California, according to an announcement by C. W. Kraft, president.

Mr. Smith, who has had years of practical experience in his field, received his original training at the University of Washington, widely known for its major interest in ceramics.

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WOMEN'S AUXILIARY, A.C.S.A.

Inaugurating a new plan for meeting in the homes of members, the Women's Auxiliary to Alameda County Society of Architects assembled for dessert at the residence of Mr. and Mrs. Frederick L. Confer, 25 Wisteria Way, Piedmont, Wednesday, March 18th, with Mrs. Irwin Johnson, newly elected president, presiding. Mrs. Chester Treichel, program chairman, presented Mrs. L. A. Harper of the American Women's Voluntary Service who gave a short talk on women's place in defense activities.

This year's officers are as follows: President, Mrs. Irwin M. Johnson; Vice President, Mrs. Chester Treichel; Recording Secretary, Mrs. Lewis Koue; Corresponding Secretary, Mrs. Carlton A. Steiner; Treasurer, Mrs. Morton Williams. Chairman of the following committees, taking over duties for the new club are: Legislative, Mrs. Frederick L. Confer; Education, Mrs. Loy Chamberlain; Membership, Mrs. Albert Leubet; Publicity, Mrs. John H. Geering. Two special chairmen were appointed—Mrs. Leffler Miller to head Cookie Brigade for service men, and Courtesy Chairman, Mrs. Frederick L. Confer.

Auxiliary members and their architect husbands recently held a joint meeting at the Carl Werner residence, Alameda, to view motion pictures of Latin American gardens presented by Howard Gilkey, in charge of the annual spring flower show.

ARCHITECTS' AUXILIARY ACTIVE

Mrs. Gardner Dailey, Director of the Red Cross Blood Procurement Center, spoke on the activities of the Center at the meeting of the Architects' Auxiliary of the State Association of California Architects Wednesday, April 1. Mrs. Dailey is devoting her entire time to this work.

The Auxiliary meeting was held at the home of Mrs. Mario J. Ciampi. Mrs. Harold H. Weeks, president, presided.

On April 10 a Victory Fund Bridge Party was held by the Auxiliary.

U. S. STEEL ALL OUT FOR WAR

Direct and indirect demand for defense and lend-lease needs have reached the equivalent of more than three-fourths of U. S. Steel's current steel shipments, Irving S. Olds, Chairman of the Board of Directors, disclosed in the 1941 Annual Report of United States Steel Corporation. He stated that throughout the year 1941 "the entire resources and facilities of United States Steel Corporation and subsidiaries have been at the call of the Government."

"The Government during the year has availed itself of the facilities of the subsidiaries of United States Steel Corporation to the extent of taking a substantial part of their production and will take an even larger part of their total output in 1942 to meet the basic

needs of the nation," Mr. Olds explained.

Steel production for military, naval, and other national emergency needs have been accelerated in every practical way. Referring to U. S. Steel's policy of full cooperation with the Government, the chairman indicated that certain subsidiaries have undertaken the construction of vast steel-making and finishing facilities, as a part of the steel expansion program deemed advisable by the Government.

DEFENSE TRAINING COURSES

The School of Architecture and Allied Arts of New York University announces five intensive practical drafting courses in Electric Light and Power, Heating and Ventilating, Plumbing, Structures (Reinforced concrete, steel and wood), and Ship Construction. These courses will continue for 7½ weeks, meeting four nights a week, three hours a night.

With the curtailment of construction for civilian needs, and the ever expanding war program, there has developed a marked shift in the requirement for drafting personnel. The scope and tempo of the building program calls for specialization, every man doing his job, doing it quickly and doing it well.

The architectural and engineering draftsman already possesses a technique and facility for representation, and a knowledge and appreciation for structure. He can be trained to adapt himself most rapidly to the more specialized tasks now demanded of him.

INSURE BAY BRIDGE FOR $33,750,000

Reinsurance of the San Franciscso-Oakland Bay Bridge, which was hampered by the European war, has been assured by a group of San Francisco and eastern brokers, according to an announcement by Director of Public Works Frank W. Clark, who is Secretary of the California Toll Bridge Authority.

The bridge will be insured for $33,750,000 as soon as negotiations on the terminology of the insurance policy are completed.

A considerable portion of expiring insurance on the span was covered by London and European brokers.

RUNNING FIRE

(Continued from Page 7)

Now things have changed materially and no doubt many of those who have been forced to punch a time clock along with others, who did not even know the orders, are going to find that whether you can deliver a lecture on the merits of "The City of Tomorrow," the vagaries of Frank Lloyd Wright, our Spanish architect of the 16th century, is not half so important as they thought it was.

• *THE WHEEL*

Our conceptions of art continue to revolve along a fixed perimeter. We seemed to go through cycles that vary only in their length and frequency, and invariably when we complete the cycle we find ourselves back, more or less, in the same position whence we started.

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CITY AND REGIONAL PLANNING

A short summer course in city and regional planning will be held at the Massachusetts Institute of Technology during the three weeks beginning Monday, July 13. The program, sponsored jointly by the Institute and the American Society of Planning Officials, is arranged to meet the need for an intensive course covering both the administrative and technical aspects of city and regional planning.

The program will be divided into four sections as follows: City and Regional Palnning, given each morning from July 13 to July 24; Planning Legislation, given each afternoon from July 13 to July 17; Planning Administration, given each afternoon from July 20 to July 24; and Techniques of Planning, given each morning from July 27 to July 31. Each section will consist of a series of lectures and discussions, arranged in such a way that those wishing to participate may register in one or more without loss of continuity. The seminars will cover such subjects as zoning, subdivision control, traffic problems, basic data surveys, master plans for communities and regions, housing, the powers and duties of planning and zoning agencies. Emphasis will be placed on new demands made on the planning profession during the war and post-war periods. Opportunities will be provided for the study of design or research problems under supervision.

Applications for participation in the program should be sent to Professor Frederick J. Adams, Division of City Planning, M.I.T., Cambridge, Massachusetts, not later than July 6, 1942.

MORE ARCHITECTS MIGRATE

Mario J. Ciampi has moved to 85 San Pablo Ave., San Francisco.

William Herbert has moved to his residence, 1633 Austin Way, Santa Rosa.

Paul W. Jones' new address is 1628 Ninth Street, South, Fargo, North Dakota.

G. Albert Lansburgh from San Francisco to 28 West Fourth Ave., San Mateo.

Willis C. Lowe from Oakland to 139 East 39th Street, New York City.

Raymond F. Peppin moved to 3514 Scott Street, San Francisco.

W. H. Ratcliff, Jr., to 2323 Shattuck Ave., Berkeley.

E. M. Sharpe to 90 Parker Ave., San Francisco.

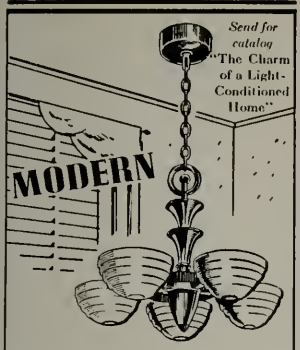
Clarkson Swain moved to Apt. 303, 2425 Buchanan Street, San Francisco.

William Symmonds from Fresno to c/o Federal Housing Administration, Post Office Building, Sacramento.

Williams & Wastell moved from Franklin Building to 5824 Ocean View Drive, Oakland.

MEDAL FOR ALBERT KAHN

Albert Kahn, noted industrial architect of Detroit, has been awarded the medal of the Philadelphia Chapter of the American Institute of Architects. Mr. Kahn was honored for his design and execution of many of the nation's most important war plants.



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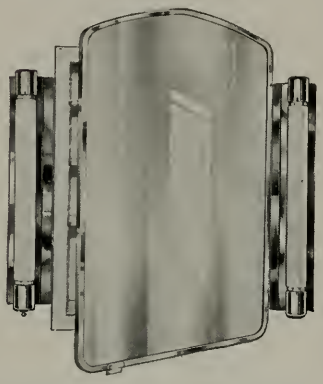
FLUORESCENT LIGHTED CABINETS

The F. H. Lawson Company, Cincinnati, Ohio, reputed world's largest manufacturer of bathroom cabinets, has recently introduced a new line of "Quiet" fluorescent lighted cabinets that are as practical as they are beautiful.

Mechanically right in every detail, these newly designed fluorescent lighting fixtures are an integral part of the cabinet, not just a makeshift attachment. Due to a patented self-starting switch and an improved resister, all hum and flicker have been



eliminated. In addition, because these lights are luminous over the entire length of the fluorescent tube, they give more light with less glare. They are always cool, with practically no heat loss, and their power consumption is remarkably low. The switch controlling both lights is located in the base of the left bracket, a convenience outlet in the base of the right bracket.

Although the F. H. Lawson Company has temporarily simplified all of its lines, in cooperation with America's victory program, it will continue to manufacture these fluorescent lighted cabinets as long as materials are available.

SUGAR FOR MUNITIONS

Every time a 16-inch gun is fired, it eats up the distilled product of a fifth of an acre of sugar cane. A thousand field pieces in an hour's firing burn up as much sugar as could be refined from a field two-thirds of a mile square.

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Sugar alcohol is used for other military purposes, too. It is used in compounding "dope" for use on airplanes with fabric covered wings.

We used a lot of alcohol (183,500,000 pounds) to make fulminate of mercury during the last war, but the absolutely vital use of alcohol then, as now, was in the manufacture of smokeless powder.

Major General William Crozier, who had charge of munitions in 1917-18, called "smokeless powder" the best single measure of strength that is afforded by all materials of war.

Hoarding sugar, or any other product which Uncle Sam needs to successfully prosecute the war, should not be countenanced.

LOW INCOME HOUSING NEEDED

Cities crowded with defense workers face the challenge of producing "really low-cost homes," of rehabilitating existing sub-standard structures into decent living units, or of overbuilding in a manner which may cause serious difficulties after the war, John H. Fahey, Commissioner of the Federal Home Loan Bank Administration, declared in a recent news release.

"The War Production Board has authorized construction of 200,000 more housing units by private industry," said Mr. Fahey. "These units are needed for defense workers and must be produced, but if they do not meet the needs of low-income workers, they will not achieve their purpose. Briefly, the situation can be summarized.

1. There always has been a lack of low-cost housing for low-income workers. All that is produced now by private industry should have a use after the war. That does not mean $6,000 in most cities—it means $3,000 and $4,000 housing.

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2. Rehabilitation is the cheapest method of producing additional housing and the use of existing structures, and utilities—streets, water, electricity, sewers, etc. — will protect rather than harm property values.

3. Too much new housing built on the rims of cities, speeding the abandonment of centralized locations, or built where a large amount of substantial but neglected housing exists, may cause a serious situation in many communities when war industries are closed down.

"Many civic leaders have realized the danger of over-building. But many of them have opposed new construction without supplying a substitute. It stands to reason that defense workers must be adequately housed and the Government intends that they shall be so housed. Private industry must do its part in the job—so it has two alternatives: the rehabilitation of existing structures or the erection of low cost dwellings which should be a safe investment for the future."

Mr. Fahey declared that "good, economical housing" is being produced in some parts of the country. He pointed to Southern California, Florida, Georgia, and various cities in Massachusetts, Ohio and Illinois, where he said $3,500 and $4,000 homes had been erected "of which any community can be proud."

"There is no question that many home-financing institutions are awake to their problems," he declared. "Savings and loan associations which are members of the Federal Home Loan Bank System loaned $311,000,000 for new construction in defense areas in 1941. Their average loan on new construction loans now is about $4600, which probably represents an average total cost for land and construction of about $4800. In some areas, however, the cost is down to $3500 and $4000 —for soundly constructed homes.

"This is the kind of housing the country needs and which can be produced safely by private funds. I do not underestimate the problem of high building costs. But where costs are too high, every possible means of rehabilitating existing structures should be surveyed and every effort made to inaugurate broad programs."

The War Production Board on March 17 announced that it had approved the construction of 350,000 additional dwelling units for war industry workers, more than doubling the original defense housing program announced last September 19. The new program, recommended by the National Housing Agency, provides for the construction of 150,000 of the 350,000 units by agencies of the Federal Government, the rest by private enterprise.

At least half of the 200,000 units to be produced through private funds will be for rent. Houses erected with priority assistance must be for sale at $6,000 or less per family unit, or for rental at $50 per month or less.

WAR HITS SUBURBAN REAL ESTATE

With the growing scarcity of tires and possible gas restrictions there are already indications of a trend back into "city limits" which movement should have a favorable effect on older houses close to street-car and bus lines. Instead of yielding to the lure of the suburbs, many home-seeking families will make a canvass of properties for sale or rent on the basis of convenience. In many cities, they find a surprising choice of houses in good condition—and more which can be made desirable by some reconditioning. They will see larger homes suitable for conversion into two-family units that will provide a rental income for the buyer. In defense areas, spare rooms and apartments are quickly rentable.

Earnings which formerly went into down payments and installments on cars and the purchase of tires and accessories will be available for other uses. True, they'll be needed for the purchase of defense bonds and taxes but there will be something left over. About 3,750,000 passenger cars were sold by the factories in 1941. If two or three million persons, who normally would be prospective car buyers this year, manifest an interest in acquiring homes, the transition will have a decided effect on the American manner of living.

"Ever since the mass production of cars at popular prices began, the automobile has been a competitor with the purchase of homes and household furnishings. Now the average family, less on the highways and with additional hours at its disposal, will be thinking more and more of a home of its own. Very often rent money will cover the monthly payments on a home. Some home-financing leaders are advising home purchase now as a 'hedge against inflation.'

As public attention is focused on the possibilities of utilizing the stockpile of housing that exists within our city boundaries, the need for a frontal attack on the problem of "blighted" areas in metropolitan centers becomes obvious. No one of good judgment would advise an individual to buy a single house within a neighborhood that is on the way to becoming a slum district. By itself, the individual family cannot change the character of a neighborhood or arrest its deterioration. Here is an opportunity for broad-scale rehabilitation by communities which are suffering huge losses annually through shrinkage of property values and tax income in declining residential areas.

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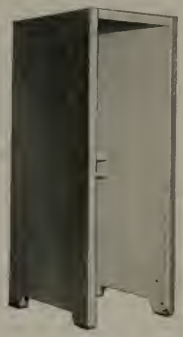

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The jury will make its selections from photographs, and all builders and owners of such structures are requested to submit photographs for this purpose not later than May first. The following data should accompany these photographs:

Name of Bridge; Location; Total Cost; Engineer; Fabricator; Owner; Date Completed; Date Opened to Traffic; Span Length; Roadway Width.

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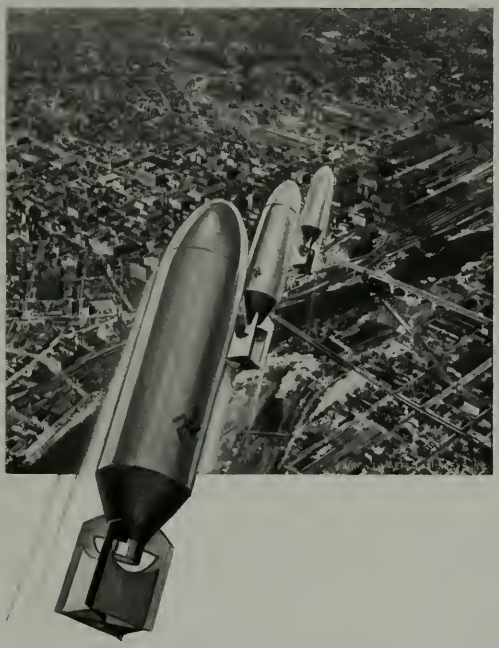

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Architects Migrate

Here are a few more subscribers who have changed their addresses on account of the war:

Glenn Allen has moved from 412 East Market Street, Stockton, to San Joaquin General Hospital, same city.

John B. Anthony, from 462 Elwood Avenue, Oakland, to 2829 Forest Street, Berkeley.

Allen C. Collins, from 356 Vassar Street, Oakland, to 5945 Marden Lane, Oakland.

Donald W. Edmundson, from 1105 Spalding Building, Portland, Oregon, to 6425 N.W. 23rd Avenue, Portland.

F. Eugene Freeman, from Clunie Building, San Francisco, to 1150 Union Street, San Francisco.

Victor Galbraith, from 1712 Lucerne, Stockton, to 834 West Willow Street, Stockton.

Harbin F. Hunter, from 815 Bankers' Building, Los Angeles, to Penthouse, Bankers' Building, Los Angeles.

Reginald D. Johnson, from 707 Architects' Building, Los Angeles, to 3717 South Sycamore, Los Angeles.

Conrad T. Kett, from 519 California Street, San Francisco, to 75 Crecienta Drive, Sausalito.

Newsom & Newsom, from 616 Postal Telegraph Building, San Francisco, to 5951 Contra Costa Road, Oakland.

Guy L. Rosebrook, from Salinas to Stockton, California. P. O. Box 1488.

Eugene J. Seadler, from 2710 Marshall Way, Sacramento, to 2749 Tenth Avenue, Sacramento.

Leo J. Sharps, from 1319 Howard Avenue, Burlingame, to Box 84, Hamilton Field, near San Rafael, Calif.

Henry M. Stedman, from 535 Ramona Street, Palo Alto, to 666 Kellogg Avenue, Palo Alto.

Ezra H. Steelman, engineer, has moved from Atascadero, California, to R. R. 1, Box 277, Central Point, Oregon.

W. Redmond Stout has moved from 515 First National Bank Building, San Jose, and transferred to Care of C. Q. M., Hawaiian Dept., Fort Shafter, Territory of Hawaii.

Lawrence G. Thomson, from 1284 Thorne Street, Fresno, to 542 Nineteenth Street, Oakland.

Gene Verge, to 3716 Fletcher Drive, Los Angeles, from 604 Beaux Arts' Building, same city.

John D. Wagenet has moved from his office at 1700 Financial Center Building, Oakland, to his home, 1597 Fernwood Drive, Oakland.

Walter E. Wagner, from 1402 Harrison Street to 1221 Blake Street, Berkeley.

J. Weston, from 701 Cogswell Road, El Monte, California, to 317 New Jersey Avenue, S. E., Washington, D. C.

A. B. Willett, Engineer, from 2628 Seventeenth Street, Sacramento, to Hamilton Field, near San Rafael.

James W. Plachek has given up his office temporarily at 511 Mercantile Bank Building, Berkeley. New address, Lafayette, California. P. O. Box 239.

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RUNNING FIRE — By MARK DANIELS, A. I. A.

• *PASSING OF THE ARCHITECT*

In Melbourne, Australia, the Students' Society of the Royal Victoria Institute of Architects publish a monthly entitled "Smudges." In a recent issue appeared an article by Editor Penleigh Boyd captioned "Death of the Architect." In this country they would probably have added, "Housing Officials, Pall Bearers."

It was printed in heavy, black face type and most appropriately boxed with one eighth inch black border as a death notice.

Some of Mr. Boyd's statements were directed to the Australians but many were for the architect in general, such as, for instance, the following: "Yesterday's world denied architecture. It was an afterthought; a nice thing (like poetry) for those who like that sort of thing.

"Tomorrow's world will start with planning, will flourish through architecture. With the passing of the architect, architecture will be born to the earth. The architect is dead—long live architecture!"

For the past year or two I have timorously approached the subject of the fate of the architect but have never had the courage to make such positive statements as those in "Smudges." Nor do I agree with them that all architects are doomed. I do not agree that all the architects are dead—only most of them. Those great men who happen to be architects, who can create great edifices and monuments, will always be with us. The little men will pass out.

No, I do not believe THE architect is dead but the architects are.

• *THE FLAT FEE*

The principle of the flat fee has many advantages for both the architect and the client if it is carried out in toto. When it is employed as the Housing Authorities apply it, it is unfair and inequitable to both the authorities and the architects.

When the mechanical, structural, electrical and landscape engineering fees are included in the lump sum architectural fee on the basis of an arbitrary proportion the result obviously may be far from right in either direction. In a class A or B building, the engineering fees which must be paid by the architect out of his lump sum fee, may leave him less than the actual cost of getting out the architectural plans. In the case of class C or D buildings the same percentage allowance will leave the architect overpaid.

The system of establishing lump sum fees has been, I fear, partly based on the records of payroll costs demanded of the architect. These costs do not include overhead such as rent, telephone, blue prints, engineering fees and innumerable incidentals.

• *WHEN IS AN ORGANIZATION?*

The Government, and by this I mean the War and Navy Departments, the new Public Housing Authority combining all those former authorities, the F.W.A., U.S.H.A., P.B.A., etc., etc., has swallowed the bait of "Organization," hook, line and sinker. "What is your organization?" is their first question. "How many men have you? How many rooms?" Of course, a general contractor bidding to do a twenty million dollar job must have an organization and large equipment, but with half of the lofts in the city vacant and an equal proportion of young architects starving, a capable architect can expand to handle almost any sized job in a very short time. The room that he needs is enough room in his head to embrace a big project.

The eastern architects and engineers were quick to get going. They grouped together to make up a so-called large "Organization" and grabbed off the business. If a chain is no stronger than its weakest link, such an organization is no stronger than its weakest member.

Only yesterday one of those "Big Eastern Organizations" sent for a very talented structural engineer here in San Francisco. They had taken on a job for the Navy Department of a character they had overlooked when hastily putting their "Organization" together. He is to do practically all the designing and structural engineering on this and several other similar jobs, all of which he could have done in his own office for less than half of what the government will have to pay. He had applied for similar work but they said his "Organization" wasn't big enough. So now he is doing the work anyhow and the government pays for it twice.

I am not decrying organization as such, only the demand of government that there must be an organization already established before they will discuss the matter with an architect or engineer. Jobs that run into hundreds of millions can best be handled by great organizations whose annual operations justify operating on such a plan. But there are hundreds of architects and engineers who can expand over night to handle efficiently the innumerable smaller jobs that are being held up awaiting their turn with a so-called big one. Two or three "Organizations" have been put together here on the Coast but I fear the big shots in the East have beat them to it. They will likely get the work, anyhow, but, as in the case of the unions, the organizers will probably get most of the fees.

• *THE O.A.B.*

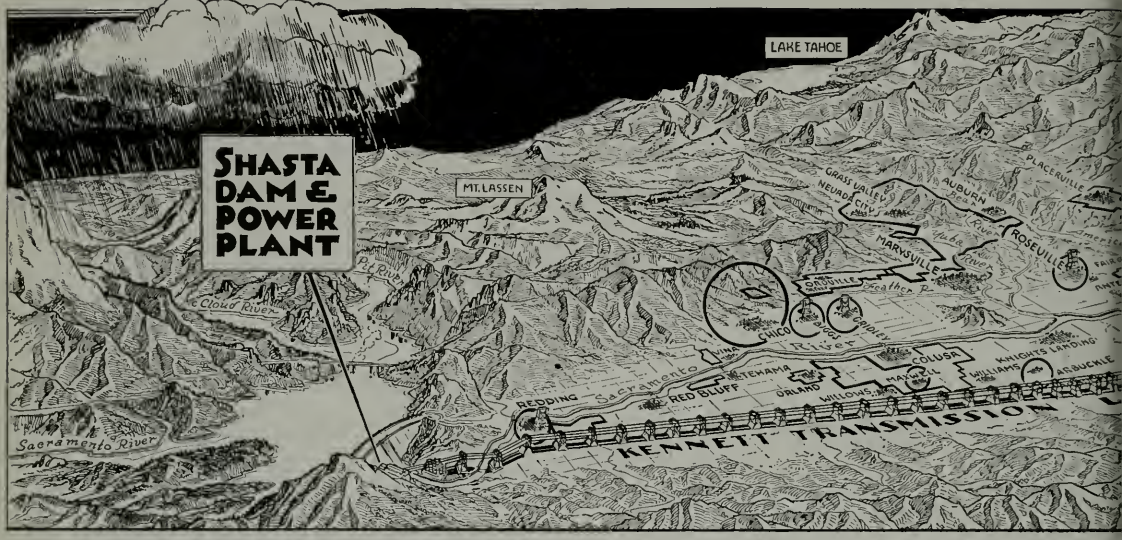
The Old Age Benefit tax is another one of those schemes which the lawyers call unilateral. The employer, who all too often goes broke paying out salaries and wages, contributes one per cent to the employee's benefit tax in addition to the one per cent that the employee pays, but the employee is the only one who benefits from the tax. One prominent architect told me that his chief designer received more in salary on each of his last three jobs than the architect made clear on all three. In another instance the foreman of a small factory finally bought the home of his employer, who had gone broke paying the foremans salary.

It seems to me that some sort of a benefit should be devised for impoverished employers, based upon the amount of salaries they have paid out.

• *NATIONAL RECOGNITION!*

An ambitious Oakland architect had a lot of photos taken of one of his housing projects and sent them to an Eastern architectural magazine, rather than give them to the Architect and Engineer. After keeping the pictures for some time just one of them was published sans the architect's name. The photographer, however, got a credit line!

SHASTA DAM POWER . . . PLANS FOR ITS MARKETING



SKETCH MAP OF CENTRAL VALLEY WATER AND POWER PROJECT IN NORTHERN CALIFORNI

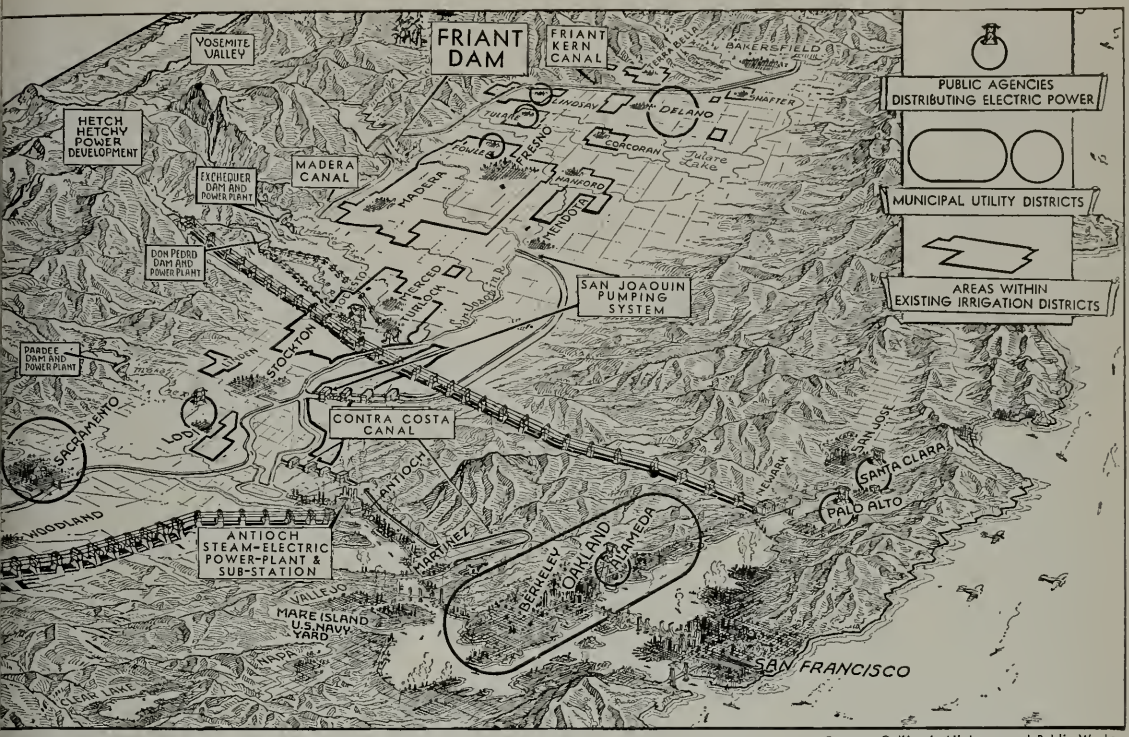
The recent action of the Appropriations Committee of the House of Representatives of Congress, deleting $15,000,000 for construction of the Central Valley Project transmission lines and a steam plant at Antioch, California, has naturally caused some concern on the part of those most interested in this important California development. The following comments are important, since they come from one who is well qualified to speak, none other than Charles E. Carey, in charge of the marketing of Central Valley Project power for the Bureau of Reclamation:

"Somehow or other, I feel that those transmission lines which are an essential and integral part of this development will be built eventually by the Federal Government. They are so essential and so important to the success of the whole project that it seems to me they can not be overlooked."

Mr. Carey revealed to the Water Project Authority of California, that the offer of the Pacific Gas & Electric Company to purchase all power generated at Shasta Dam and at Keswick has been turned down by the Department of Interior.

"As I see this picture," he said, "the water of this valley—and when I say 'water' I mean water in all of its uses—is to be put to work to produce the maximum prosperity of the region. That means water for navigation, water for irrigation, water for industrial and domestic use, and the concomitant power.

"I have recently come here from 20-odd years' experience in your neighbor States. I have seen power create a new economy in Oregon and Washington in a period of months. I have seen low-cost power from the Columbia River go into that territory and an economy



Courtesy California Highways and Public Works

HOWING HOW IRRIGATION AND ELECTRIC FACILITIES CAN BE LINKED TO NEW SOURCES OF SUPPLY

which was based upon forest and forest products and upon agriculture, change, inside of 12 months, to an economy of the future which will be based upon light metals and new metals and hard metals.

"Because of the low-cost power in that territory we are seeing a new empire being created on the coast. We are seeing new industries come in there, industries which will produce and manufacture aluminum, magnesium, ferro-chrome, ferro-silicon, calcium carbide, new chemicals, new fertilizers of phosphorous.

"We have seen the so-called white elephants of the Columbia River—and people said there was no use for the power—we have seen the time come inside of a few months in which not only was all the power which they could generate put to work but there was a cry and a demand that all of the generators in Coulee and Bonneville be installed as rapidly as possible. We have seen in a period of 18 months the first power from Bonneville being delivered and at the end of 18 months we have seen firm, definite contracts for power totaling over 700,000 kilowatts, with a continuous output of somewhere in the neighborhood of about 350,000 kilowatts, which was the total amount of generating capacity then installed. And above all, we have seen the most rapid rise in the increase of the consumption of power that has ever taken place anywhere in this Nation or any place else. In the State of Washington alone it has increased in a period of 12 months by an amount greater than 52 per cent in kilowatt hours.

"That has been the result of two things: of a carefully planned program of having power available, and the second one is having a rate structure, a cost of power, that would attract the industries into that territory. I could tell you in a lot of detail what these industrial plants

(Turn to Page 13)

MENDELSOHN AT SAN FRANCISCO MUSEUM

Despite rather casual and unimpressive mounting in a room given over at times to other and even incongruous activities, the retrospective exhibition of Erich Mendelsohn's work at the San Francisco Museum of Art was a glimpse into architecture as a living art. The simultaneous presence in the community of the architect himself provided stimulating contact with a creative and intellectual figure of the first importance.

The three lectures delivered at Berkeley for the School of Architecture of the University of California revealed an intelligence at once comprehensive and analytical, as well as human sympathy and hope heartening under any circumstances at the present juncture in the world's affairs, and doubly so in the light of his own personal experiences. Architecture was vividly presented, not as a backwash of historical scholarship and aesthetics, but as fundamentally and essentially a social concern. Some of this material was subsequently offered in a talk at the San Francisco Museum; and on the eve of his departure Mr. Mendelsohn personally conducted about the exhibition a small, privately gathered group.

The exhibition ranged from the early very personal and concentrated, almost diagrammatic, sketches through the work done in Germany, in England and in Palestine. The variety of expression in these three successive phases of one man's work should be sufficient answer, if one were still needed, to the iterated charge that all modern architecture is alike.

Mendelsohn's work has been one of the authentic formative influences in the development of what goes in certain quarters under the name of the "international style." After the "pipe dream" sketches came the Einstein Tower at Potsdam. A long road has been traveled since this early essay. In the words of the caption accompanying the photograph, it "was designed as a dramatic expression of the plastic possibilities of concrete." It has always been my conviction that the kind and degree of plasticity here envisaged is mistaken. Concrete, to be sure, is soft, even liquid, when installed; but it is not and can not be manipulated under the hands like clay. Its plasticity is strictly conditioned and limited by the confining forms. "Actually," the caption goes on to say, "because of difficulty in obtaining cement, parts of the building were constructed of brick, with concrete surface rendering;" which is somewhat disturbing. Altogether this building, despite its fame, falls far short of the secure realism for which Mendelsohn's name has come to stand.

In the subsequent buildings the architect achieves full insight into the natures of the typically modern materials — steel, concrete, glass — and an expressive vocabulary for their presentation. The German buildings are part and parcel of an industrial culture. A situation physically and culturally not entirely dissimilar leads to a more or less analogous expression in England. In Palestine, on the other hand, a radically new climatic, pictorial and cultural background has eventuated in a wholly new architectural expression. In the directness and concision of their physical, social and aesthetic organization these buildings are magnificent. In fact, they constitute eloquent testimony to the neglected truth that the artist's real business is not to embroider upon life and experience, but to organize them.

One particular aspect of Mendelsohn's composition is interesting to note. Throughout all phases of his work he seems particularly intrigued by perspectives of concentric arcs of varying radii and elevations. Outside and inside, in diverse circumstances and at diverse scales, his mind seems spontaneously to recur to the intricate but essentially clear decorative polyphonies afforded by this device of organization.

Modern architecture has emerged from the cult stage into the public domain. Many innovations appear natural, easy, inevitable even, once the way has been shown. In the development of this common stylistic property Mendelsohn has been a prime mover. There is no question that he belongs among the half dozen most significant architectural figures of our times.

Irving F. Morrow.

ONE-MAN SHOW AT DE YOUNG

Rico Lebrun, a West Coast artist, born in Italy but achieving national prominence since coming to America in 1924, is well represented by a one-man show in the de Young Museum galleries, Golden Gate Park, San Francisco.

Recognized as a leading teacher and craftsman in the contemporary American art field, Lebrun strikes a fresh note in the art of our day, combining with great perception and extraordinary sensitivity the passage of line and the staccatto of accent (the plastic means of painting) along with the nervous, descriptive power of graphic contour. He is equally at home in the fields of painting and drawing, and both mediums will be fully represented in the forthcoming exhibition of his work.

To Rico Lebrun's credit are a Guggenheim Fellowship held in 1935 and again in 1937, many years of active teaching at the Art Students League in New York and at the Choinard Art Institute in Los Angeles, the execution of several murals in public buildings throughout the country, and recurrent representation in important exhibitions, among recent such exhibits a showing of his work at the Museum of Modern Art in New York City.

MEXICAN ART AT S. F. MUSEUM

Paintings by modern Mexican artists were exhibited at the San Francisco Museum of Art beginning May 19 and will continue until June 14. This group of 43 paintings introduces Bay region art lovers to many new names, renews the acquaintance of familiar ones. Diego Rivera is represented by a self portrait as well as the Museum's "Flower Vendor." Frida Kahlo Rivera shows her painting entitled "Diego and I," also from the museum's permanent collection. Other familiar names are Orozco, Charlot, Montenegro, Siqueiros.

The exhibition is mainly the choice of MacKinley Helm whose book, "Modern Mexican Painters," was published last spring after three years' travel in Mexico, where he won the respect and friendship of Mexico's artists. They believe the paintings

he chose for this show faithfully reflect their individual interests as well as the inner character of the modern art movement in Mexico. Like the average man's picture of a Mexico of sombreros and gaudy color, we are inclined to consider Mexican art from the travel poster viewpont. This excellent group of paintings will dispel that notion; though much of the work illustrates the Mexican scene, it is expressed diversely by artists long aware of art trends in Europe and America.

NEW CALIFORNIA ARCHITECTURE

In its art section "Time" (April 25) gives generous space to the recent showing at the San Francisco Museum of Art of five modern houses classified under the general title, "Western Living," and designed by Messrs. Richard Neutra, Harwell Harris, William Wurster, Hervey Clark and John Dinwiddie. "Time" heads its article "New California Architecture" and prefaces its comments with the following more or less familiar "panning" of Southern California architecture as far back as 1931, by Critic Edmund Wilson:

"Here you will see a Pekinese pagoda made of fresh and crackly peanut brittle—there a snow-white marshmallow igloo—there a toothsome pink nougat in the Florentine manner, rich and delicious with embedded nuts. Yonder rears a clean pocket-size replica of heraldic Warwick Castle —yonder drowses a nausey old nance. . . . And there a hot little hacienda, a regular enchilada con queso *with a roof made of rich red tomato sauce, barely lifts her long-lashed lavender shades on the soul of old Spanish days. . . ."*

"In 1942," 'Time's' critic says, "Mr. Wilson would have to acknowledge another side of the picture. In the past decade, particularly, California hillsides have been burgeoning with more up-to-the-minute architectural neatness than any comparable area in the U. S.

"The San Francisco Museum of Art recognized this architectural trend by putting on show models and plans by five of California's ace modern architects. The exhibition proved three things: (1) that California has developed its own brand-new style of domestic architecture; (2) that this style is perhaps the most advanced and progressive in the world today; (3) that California architects have succeeded in evolving a type of house that is modern and homelike at the same time.

"Light, airy, cheap (under $7,500), the houses in the museum's exhibition were pleasantly unconventional, individual, beautifully suited to their California settings. Walls and sliding partitions of transparent glass catered to the Californian's desire to spend half his life out of doors and made adjacent woods and gardens an intimate part of the interior decoration. Built to cling to steep slopes, many of the houses stepped gracefully down terraced levels, with front entrances and garages on their top floors.

"Interiors, simply decorated with matted floors and modern furniture, recalled smilar interiors in Japanese houses. Like Japanese interiors, some were fitted with sliding panels and partitions which could convert big rooms into little ones.

"One important influence, acknowledged with particular reverence by Architects Clark, Wurster and Dinwiddie, is that of an 80-year-old pioneer named Bernard Ralph Maybeck, Brooklyn-born son of a German woodcarver, who went to California in 1894 and later became the founder and director of the University of California's School of Architecture. A romanticist, like Frank Lloyd Wright, he was the first architect to use unfinished California redwood as a decorative element in beautiful building, the first to wed his free, unconventional designs to the mountainous beauty of the California landscape. Maybeck is principally remembered for his dreamlike Palace of Fine Arts at San Francisco's Panama-Pacific Exposition of 1915.

"Most important of all influences on the new California style, however, is probably that of California itself. Use of native materials like redwood, dictated by economy, has become a distinguishing feature. A climate whose temperature seldom falls below freezing simplifies heating problems, allows greater freedom in window and wall structure, permits shallow foundations which need penetrate the ground only a foot or so to get below the frost line."

FLOWER VENDOR, oil on panel by Diego Rivera, contemporary Mexican. Albert M. Bender Collection at the San Francisco Museum of Art.

RUSSIAN ART SHOW

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ARCHITECT & ENGINEER

in Russia from the days of Dyaghilev in the early 1900's to the robust realism characteristic of the Soviet viewpoint, is announced as one of the season's major events now showing at the de Young Museum, Golden Gate Park, San Francisco.

The turbulent history of Russia during the 20th century, its modes and manners, social sentiments and ideals are all vividly recorded in the numerous works of art that comprise this exhibition. Especially revealing are the pictures painted by Bobritsky, Burliuk and Grigoryev during the traditional period between feudalism and socialism, the work of Cickowsky, Deyneka, Palmov and Yasilyev during and after the Russian revolution, and of equal importance are the brilliant designs for ballet and theatrical decor by Anisfeld, Chernov, Goncharova, Larionov, Sudeykin and others. Significant examples of contemporary Russian folk art and a large selection of prints and illustrated children's books help to round out this stimulating story of Russian art in our time. The show comes from the great Christian Brinton collection and the American Russian Institute and is circulated by the Philadelphia Museum of Art.

Augmenting this exhibit of contemporary Soviet art is a gallery wholly devoted to Russian paintings of the late 18th century—the art of Imperial Russia. The contrast of the old and the new Russia through its art should be of vital interest to the public at this time.

FOR ARTISTS IN THE SERVICE

Wanted—easels and drawing boards in good condition; artists' colors—oil, watercolor, pastel, tempera; palettes; canvases and stretcher boards; brushes — for oil and watercolor, palette knives; drawing paper of all kinds; drawing mediums of all kinds.

The de Young Museum has been asked to find art materials for artists in the army training camps who are handicapped by a lack of supplies. The museum will receive all materials at the information desk, or if it is not possible to bring them, telephone the museum, BAyview 2067, to arrange for pick-up.

AT THE GALLERIES

The museums contribute the following announcements of events to occur after publication date of the Architect and Engineer:

California Palace of the Legion of Honor

EXHIBITIONS

Salvador Dali. Circulated by the Museum of Modern Art. Opening May 16.

Watercolors and drawings of Death Valley, by Rowena Meeks Abdy. Through May.

Lithographs by Larsen Lorenzen, Ray Bertrand and Theodore Polos. Through May.

MOTION PICTURES (Admission free)

May 23—"The Love Parade," directed by Ernst Lubitsch, with Maurice Chevalier and Jeanette MacDonald. Sound. (1929)

May 30—"The Passion of Joan of Arc," directed by Carl-Theodor Dreyer. This famous film, with its monumental close-ups, presents Joan's trial and death with much emotional force. Sound. (1928)

ORGAN RECITALS

Uda Waldrop, organist. Each Saturday and Sunday at 3:00 p.m.

SHASTA DAM POWER

(Continued from Page 9)

are; I could tell you in a lot of detail what this whole power program has meant up there.

"If nothing else, it has meant a new economy. It has meant the beginning of a new industrial expansion in Oregon and Washington and on the Pacific Coast, and, above all, it means permanent jobs for 10,000 or 15,000 people. When I say 'permanent,' I mean just that, because those of you who will translate the cost of energy in kilowatt hours to the cost per pound of aluminum, magnesium, and many of these basic materials, will find that one mill difference in the cost of energy per kilowatt hour means one cent or 1½ or 1¾ cents per pound in the basic cost of aluminum or magnesium or synthetic rubber. For that reason the low-cost power in that territory will maintain and sustain and keep the so-called war plants in operation long and continuously after this war emergency is over.

"There is another part of this power program that is important, and that is you individual consumers and you people who use either water or power are entitled to receive those facilities at the lowest possible cost. The record to the north and the south of you, places where the program of multiple-purpose projects has been carried out continuously, and aggressively, in order to accomplish the goal, shows an ever-increasing use of energy in the home; and along with it we have found a rapidly decreasing cost of that energy.

"The entire States of Oregon and Washington during a period from 1933 to 1940 have enjoyed continually decreasing rates for electric energy, and the savings which have resulted from these rate reductions which were made by the public systems, and likewise the private systems, are now amounting to approximately $9,000,000 per year. That does not consider any power that was delivered by Bonneville and Coulee. The influence of those plants and the policies which went into effect were worth better than $9,000,000 a year to those two states.

"In a territory in which the power facilities, the number of people, and the policies are quite similar to the Central Valley Project, you have a pattern and you have a possibility of what the power program can and might do in this territory. I am quite sure the people in this territory can use a saving of $9,000,000 a year, regardless of where it comes from, the saving in power bills and what-not, because after all that saving in power means that you merchants and you people who have other things to sell find that that money goes back to the merchants and the other people of the community, either for homes or for other commodities.

"As I say, I see this power picture perhaps in a different light than a lot of you people because I have approached it, gentlemen, as an engineer sees power at work, power doing things and power making things and power reducing the costs of everything that we use. In order to accomplish that, there must of necessity be a policy behind the marketing of that power which fulfills a fundamental principle, namely, that the power from these public works projects must be made available to the ultimate consumer at the lowest possible cost.

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Printed in blue on a white background, the placard carries the initials "WPB" on which are superimposed the words:

"AUTHORIZED CONSTRUCTION WAR PRODUCTION BOARD"

There is space on the placard for a serial number, identifying the individual project, which will be given the project by the War Production Board. The placard may be used only for the particular project for which it is issued and should be destroyed when the project is completed.

Projects which have been authorized by WPB since April 9, will receive their placards sometime this week. All others will be sent to applicants in the same package with authorization papers.

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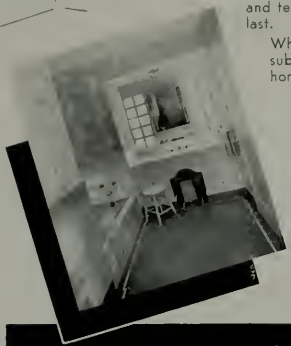

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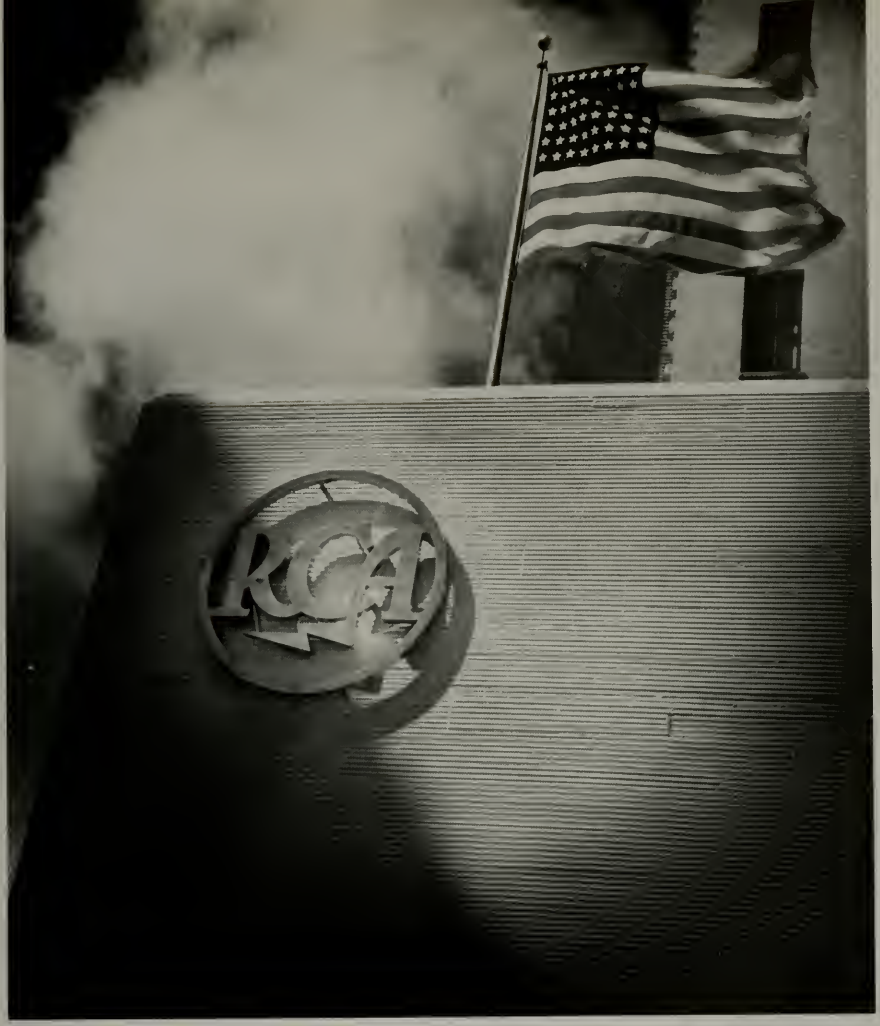


CLOSE UP OF SOUTH SIDE OF TOWER

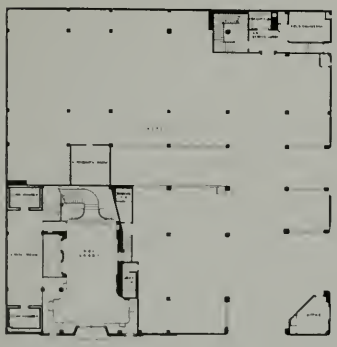
RADIO'S NEWEST PLANT

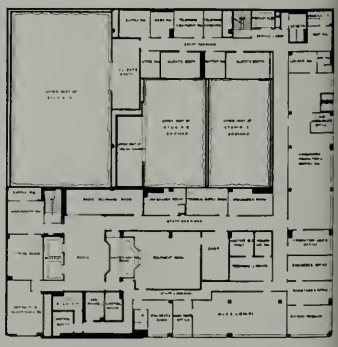
THE N.B.C. BUILDING IN SAN FRANCISCO

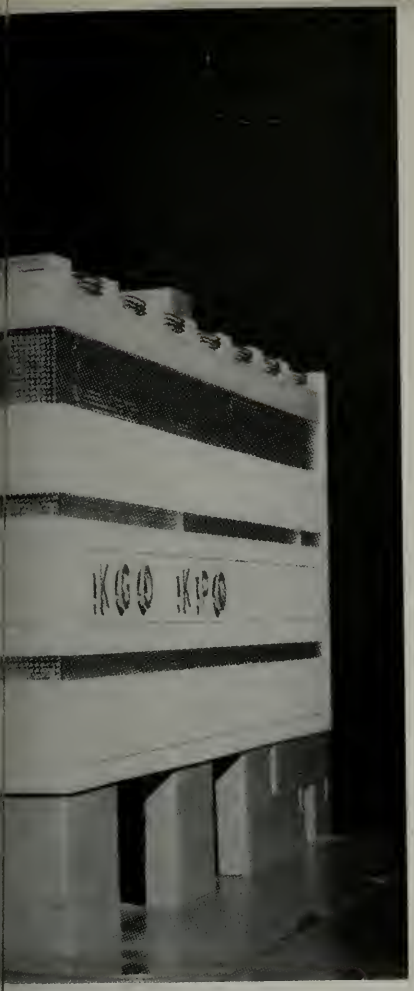
San Francisco's new Radio City, home of the National Broadcasting Company's KPO and the Blue Network Company's KGO, dedicated the week of April 26, is rated and deservedly so, as the most perfect plant of its kind ever designed. The million dollar structure has definitely established the city by the Golden Gate as one of the four great radio centers in the United States.

Of modern, streamline design the building contains some 52,800 square feet of floor space, more than double the area of previous quarters. There are five stories, minus a single window, although the reinforced concrete walls are embellished with bands of glass brick which admit daylight but are not transparent. The entire building is air conditioned—not merely air-cooled. Seven times every hour all the air is changed by the

ARCHITECT'S DRAWING OF RADIO BUILDING, NEW HOME OF NATIONAL BROADCASTING COMPANY, SAN FRANCISCO. First, Second and Third Floor Plans Below







most modern of equipment. Every minute this installation delivers 41,210 cubic feet of air, perfectly balanced at 70 degrees and 45 per cent relative humidity, to the studios and offices.

Nerve center of the plant, of course, is the master control desk, so designed that one man will have complete control over every studio, every line in and out of the building, all the switches and operations—like a train dispatcher directing all moving trains.

There is a special PAX system to make all house monitoring possible and to enable executives to dial any studio, any program or any other local broadcasting station, direct from their desks.

Chances of error in switching operations are reduced to a minimum by means of a master pre-set. Previously individual buttons were punched for all stations that were to carry the following program and this had to be done in five seconds. By use of the pre-set this work is all set-up in advance. When chimes ring, only one button will need to be pushed. The pre-set will do all the rest, instantly and accurately.

Following the best accepted practice, every studio has been set on springs with the walls and ceiling suspended by springs—the box within a box idea. In this way it is impossible for any outside sound or vibration to reach the studios. All wall surfaces have scientifically correct acoustical treatment and are set at angles that make echoes and sound reflection impossible.

The main entrance is on Taylor Street, near the Clift Hotel, beneath a dignified, inviting marquee. An 80-foot tower rises above the entrance, the most dramatic feature of which is a great mural panel, 16 by 40 feet. It symbolizes the vast extent of radio and the unlimited service it gives to all the lands and all the peoples of the earth.

Ten studios give KPO of the National Broadcasting Company and KGO of the Blue Network Company adequate facilities for all broadcasts, rehearsals and auditions. The largest of these will accommodate audiences of 500 people.

All studios open to the public are on the second floor, easily accessible from elevators and stairway.

Show windows at either side of the entrance and others inside the main lobby tell the story of radio, and publicize programs and radio-advertised products.

Such interesting activities as the master control room, news room, traffic, radio recording, are visible from the foyers on different floors through large windows, making it possible for visitors to see what goes on "back stage" in a broadcasting plant.

Office and studio layout and the arrange-

DETAIL OF MURAL OVER MAIN ENTRANCE, N.B.C. BUILDING, SAN FRANCISCO
Albert F. Roller, Architect
The mural depicts universal service of radio to all the peoples

ment of departments received much serious study by the NBC staff as well as the architects and engineers. The result is a series of floor plans conducive to absolute efficiency of operation.

From the moment visitors pass through the beautiful entrance doors into the lobby, they become impressed with the exquisite design and decoration. The broad stairway and elevators invite them to the second floor.

Facing this foyer is the newsroom with its teletype machines bringing news from the four corners of the earth over the wires of all three of the great news syndicates.

Through another large window visitors see the traffic department where program schedules are worked out, corrected and kept posted on huge boards.

Studio A opens directly off of this foyer through double doors and a vestibule. At the far end of the room is the large platform and to the right the control room. This studio, 41 by 70 feet, seats 500 people.

Studios B and C are just a few steps down a public corridor and are 24 by 44 feet. Control rooms are at the far ends of these studios and a pipe organ is located in Studio B. Studios A, B and C are two stories high and clients' observation booths are above the control rooms.

Other occupancy of the second floor includes sound effects room, two script conference rooms, musicians' room, artists' lounge and the necessary store rooms, lockers, service lobbies and wash rooms.

Visible from the foyer of the third floor is the master control room directly opposite the elevators. To the left is the radio recording room while at the right are studios H and J, for the presentation of transcribed programs.

Quarters of the Blue Network Company and the KGO staff are located on the third floor as well as general rooms for engineers, music and Thesaurus libraries, telephone switchboard, and photographer's dark room.

Barrett & Hilp, prominent San Francisco contractors, are the owners and builders of Radio City.

SPRING GARDEN SHOW

More than 125,000 people attended the twelfth annual California Spring Garden Show in Oakland April 27 to May 3. Part of the show was staged in a huge tent in Lakeside Park, an innovation that for desirability exceeded all expectations. The 277 foot canvas not only offered splendid opportunity to develop the theme of the show, Pan-American Gardens, but it served far better than an indoor auditorium the demands of the army for a convenient and rapid outlet of a large crowd in the event of an air raid. In the not distant future the Garden Show will be staged from its own building, according to an official announcement.

There was added significance to the event this year because it was dedicated not only to the continuance of the objectives for which it was originally started, but in addition, contributed tremendously to the maintenance of California morale in a period of national emergency.

In order to gather authentic information and material for the show, Howard Gilkey, landscape architect-designer, who developed the plans for most of the former shows, made an extensive trip last fall to the world-famous gardens of Old Mexico. The romantic Floating Gardens of Xochimilco, near Mexico City, were his inspiration for the large lagoon which formed the central feature of the main exhibit.

Floating on the surface of the water, which extended for about two-thirds the length of a 277-foot tent, more than forty boats of assorted sizes presented a colorful spectacle. The decoration of these boats was competitive for various Garden Clubs, individuals, florists. Substantial cash prizes were awarded the best entries.

The main exhibit was connected directly with the Trades Exhibit section. A tour of the show was not complete without a visit to the outdoor area, where many seemingly permanent landscaping designs were installed.

Of more than ordinary interest to the homeowner with a small plot of soil to devote to the family's vegetables were the Victory Gardens, showing how much can be done with how little.

Upper picture shows main lobby, elevator doors and stairs leading to second floor, N.B.C. Building, San Francisco.

Another view of the main lobby is shown at the left. Note sweeping curves. The color scheme is gold, silver and Chinese red.

Portion of Studio A, showing relationship of platform or stage to control room and observation booth.

Below—Control room in Studio A with engineer at control desk.

CLIENTS' AUDITORIUM AND CONFERENCE ROOM, SHOWING UNIQUE SERPENT SHAPED DESK

PREFABRICATION AND THE ARCHITECT

By ARTHUR C. HOLDEN, A.I.A.

Is the growing business of prefabrication a new menace on the architectural horizon? Should the architect resist it? Must the profession enlist in another all-out campaign to make the public understand the value of the architect as an artist? Is prefabrication a new challenge which calls for still one more attempt to stem the rising tide of commercialism?

The profession is always concerned about the attitudes which it should take. The attitudes of other men toward architects should be an object of equal concern. Architects are especially sensitive if others take a displeasing attitude toward them. They instinctively try to persuade the public to adopt the views which architects hold about themselves.

When the A.I.A. assembles for its next annual meeting in the usual garish ballroom, with its complement of committee meetings in nondescript mezzanine alcoves, no doubt the battle will be joined as to whether or not open war should be waged against the prefabricators. It probably will not occur to the architects to ask, "What sort of opinion do the prefabricators hold respecting architects?"

The writer has had some contact with the prefabricators. In association with his partner, Robert W. McLaughlin, he worked at some of the early attempts at prefabrication. As an advocate of research into all the diverse problems which affect housing, he was acquainted with the motives which prompted research in the field of prefabrication. He knows what the prefabricators are seeking, as well as some of the obstacles which they have encountered. He has had a chance to learn what the prefabricators think of architects.

Perhaps it would be well to start with a statement which is unavoidably personal. The firm of Holden, McLaughlin & Associates was not "hired" by prefabricators and thereby given a soft job doing research. No, it did not happen that way. Our firm started designing in terms of prefabrication. In 1932 a composition board was successfully used as an integral wall material, applied vertically between slotted steel ribs. A four-room house was erected for the Jeddo Highland Coal Co., Hazelton, Pa., which cost, including architect's fee, $4,750.

It took a very short time to discover that the problem of design was tied up with the problems of shop assembly and field erection. In 1932 a few of Mr. McLaughlin's friends agreed to furnish a modest amount of capital if he would agree to take charge of the management of the company and direct its activities. It was thus that American Houses, Inc., was founded.

The policy of the company was based upon the idea that design was responsible for the direction of the forces of manufacture. Design has been constantly directed so as gradually to simplify the complicated processes inherited from the past. To achieve the most desirable balance between the processes of shop fabrication and field erection, the company made three distinct shifts in the design patterns of its houses. Experience showed that facility in purchase, delivery, packing, and erection had to be considered in the selection of materials. From the original steel frame house, the pattern shifted to the house built from all wood basic parts. From the maximum of shop assembly, fabrication shifted as a result of experience to the field installation of marable finishes and details. Always, however, the paramount importance of design has guided the policies of the company.

SKEPTICS OPPOSE INNOVATIONS

In the attempt to sell prefabrication, there have been battles with overzealous officials

over the aesthetic properties of simplicity, repetition and variation, and their respective importance as elements of design. The current joke about the tipsy Philadelphia row-house dweller who couldn't distinguish his own home amid a hundred exact reproductions has had its effect upon susceptible mortgage underwriters, and made them wary of anything in the design of a neighborhood which could be dubbed with the epithet "sameness."*

The prefabricators have come up against these problems in the natural course of their work. They have been astonished to find that most architects, especially architects in official jobs, have had far less interest in what the public wants and why, than in what architects want the public to have. This has not been conducive to winning the sympathy of the public!

The public may have been slow to realize that a design of great beauty can be achieved by the grouping and harmonious arrangement of a single basic element. The citing of the achievements of the mediaeval mosaic workers has not always been a happy parallel. Though the neighborhood may be conceived to be a mosaic in which houses are the important element of the design, nevertheless, due to the small scale of the human being, this design must achieve its harmony without dependence upon an airplane view. Group planning must not be abstract. It is only necessary to recognize the house as a unit in a neighborhood composition. Harmony in the group design is evidence that the solution of human living problems has been achieved. Beauty of composition is best achieved through the harmonious grouping of harmonious units.

QUANTITY PRODUCTION IN HOUSING

With the advent of quantity orders, opportunities have also been given to improve the organization of production. All of the prefabricating companies have been able to increase their staffs; to put specially trained production specialists into their shops and into their purchasing and distributing departments. The architect leadership has been given new contacts and new opportunities for improving the product, and has meanwhile been prepared for this by the business experience gained in the experimental period.

With quantity production, however, it is not only the architects who are working directly at prefabrication, but all architects, who are offered new opportunities. The range of design has been greatly extended. It is no longer necessary for the individual practicing architect to put on horse blinders to shut out the disharmony of the surrounding neighborhood, while he lavishes his ingenuity on the over-embellishment of one single house. The house now becomes a unit in the neighborhood pattern and it is essential that its beauty be of a type which harmonizes with and enhances the beauty of its neighbors, rather than of a type to rival them for attention.

To put it mildly, the prefabricators have been disappointed that so few architects have grasped the opportunities that are offered to them. Perhaps the explanation lies in the architect's conception of his own job. To those architects who consider it their job to utilize every available facility to produce a better house, prefabrication offers no terrors. Such architects will seize upon prefabrication to find out what use they can make of it. To those architects, however, who consider that the making of drawings ought to be a monopoly to be enjoyed as the private prerogative of the architect, the growth of prefabrication appears to offer a threat to their livelihood.

MEANS OF EXPRESSION

Prefabrication reduces the necessary drawings to the terms of an erection schedule. Prefabrication has posed some very pertinent questions as to the function of the architect's pencil. Perhaps there is some truth in the charge that the architect, by increasing his proficiency with his pencil, has made himself a slave to his pencil. The clever draftsman has been able to make his picture, and then sit back and challenge the builder to imitate the drawing in solid materials. Some of the excrescences and excesses which "adorned" the main street

* The Vallejo project, illustrated in this issue, has been similarly joked about and one tenant has been quoted as saying that the only way he can find his way home after an evening "out" is to remember the color of his house. The Vallejo houses are painted blue, green, red, yellow.

facades of ten and twenty years ago are today embarrassing testimony of the influence of the lead pencil upon wood, stone and terra cotta.

In contrast, the architect who designs in prefabricated forms must think in terms of the units of materials of which his design is composed. He must, in his mind's eye, be able to fit these units together just as the child learns to fit together building blocks, or the units of a "mechano set." This is creative vital work. To many architects it may mean relearning the art of creative sketching.

The emphasis of structure rather than aspect goes back to sound tradition. The early colonial builders of New England laid out the buildings framed in oak posts, girders and beams. The sizes of the timber available and the practical spans determined the box-like character of the buildings. But what a wealth of finesse and variety was achieved within the limits of the squared rectangular frame. When power cutting machinery came into use, and the new type of stud and joist construction became a possibility, so great was the flexibility of the design that drawings became a greater necessity. Finally, the jig saw and turning lathe became the slave of the man with the pencil.

INGENUITY UNBRIDLED IN VICTORIAN TIMES

Between 1870 and 1890 American "cottage" or domestic architecture underwent a revolution. The architects of that day were called on to draw plans and they drew not only plans but elevation, which, through the ingenuity of carpenter builders, were actually built not only once but many times. The magazines of the day regularly published new ideas for "designs." "Popular designs" were collected in books and circulated in the rapidly growing cities of that period. America owes its embarrassing Victorian domestic hodgepodge to those architect makers of these drawings, who, little as they knew about beauty in drawings, knew infinitely less about the art of building. These men were called upon to put new materials together in new ways which they didn't understand. They knew nothing of those basic elements of building which make for beauty and utility.

The architect of the last twenty or twenty-five years has made marvelous strides in the design of small domestic buildings. Where he can be director or master builder, he handles the individual job well. Where he is asked merely to use his pencil to make pictures to be imitated in building materials, the results are sometimes fully as deplorable as were the errors of Victorian days.

Too few architects are asked today to work out a design for a neighborhood or a street. Too many architects are still being asked to submit half a dozen or more designs of houses so that when these are used, all the houses on the street will not look alike. In some of our larger projects today, mortgage underwriters are laying down rules that no design may be repeated more than a specified number of times. This shows almost a complete misunderstanding of the problem. An imaginative and well trained architect could take a design for a single house and by varying its placement and grouping could work out a scheme for a neighborhood far surpassing in beauty, practicality, and economy, a scheme where money had been unintelligently wasted merely in the attempt to make each individual house look different. Ask an untrained man to take the lumps out of a sugar bowl and arrange these as if he were working out a community design. Ask a trained architect or a man of genius to do the same thing, and note the different result. No better test can be suggested.

AN OPPORTUNITY FOR THE REAL DESIGNER

Give a real architect an understanding of what prefabrication means and he will grasp the opportunity and deftly apply the new technique which is placed at his disposal. He will accept the fabricated chassis; he will put emphasis upon the setting and the variation in detail, texture, and color which he can give it.

What the prefabricators want to know is why more architects have not come forward with eagerness to grasp the opportunity before them, and to play their part in developing an improved technique.

It has been the writer's privilege to meet many architects on the occasion of their first

(Turn to Col. 2, Page 32)

CLOSE UP OF ONE OF CARQUINEZ HEIGHTS MUCH DISCUSSED PREFABRICATED HOUSES, VALLEJO, CALIFORNIA
William W. Wurster, Architect

VALLEJO'S PREFABRICATED HOUSES

Perhaps Mr. W. W. Wurster's work of planning Carquinez Heights showed some lack of familiarity with the varying modes of expression in his chosen medium. Perhaps not. But whether it did or did not, the use of English by the editor who criticized it (Time, April 13th) left no doubt of a paucity of words in said editor's practiced medium of expression. Of course, if a writer cannot conjure up a synonym for "eyesore," (heaven help him) I suppose he will have to use that word, but he has less excuse for his lack of imagination than has Architect Wurster for using a flat roof instead of a pitched one.

After all, isn't Editor Henry Luce putting it a little too strong? He might have said he didn't like the scheme at all, nor the house plans;

Upper Picture—General View of Vallejo Housing Project.

Below—Houses Being Assembled.

Barrett & Hilp, Builders

that the flat roofs would not bear the snow load (an eastern architect installed snow melting equipment on a flat roof in San Francisco); that the plan was repugnant to him, or even repellant to the eye. At least, he could have tempered the wind to the shorn lamb and said the work had the "earmarks of an eyesore." But to come right out and call it an "eyesore," whatever that means, was cruel, too cruel.

It also seemed unkind to the advertisers in the large architectural magazine associated with "TIME," to blast the use of prefabricated houses after having succeeded in favorably influencing the construction of a large number of them in a western project by vigorously soliciting the patronage of the manufacturer.

The eastern architects acknowledgely have been looking to the west for new and desirable departures from time-worn eastern styles of architecture. Perhaps the editors should do likewise but apparently they are wedded to the Philadelphia style of great rows of identical brick houses, for they criticize the varying colors of Mr. Wurster's. Well, it must be admitted that varying colors simplify the problem of identification, although it puts the paint manufacturers on the spot by demanding that their product retain its color in the climate of Carquinez. Otherwise the sun and fogs of the district will soon reduce everything to that monotone which seems so to delight some eastern editors.

Mr. Wurster's contention that a group of a thousand or more small houses for working men could not be made intimate and individual within the cost limits established by the government, seems most reasonable. As to the general appearance of the entire project, any bareness or monotony of individual design will be relieved when trees and other landscape work are set out. Obviously any criticism at this time is premature.

Just to help out the publishers of "TIME," who seem to have double crossed their advertisers, it might be apropos to quote Mr. Arthur C. Holden, a very prominent eastern architect, on the subject of prefabricated houses. He writes: "Give a real architect an understanding of what prefabrication means and he will grasp the opportunity and deftly apply the new technique which is placed at his disposal. He will accept the prefabricated chassis; he will put emphasis upon the setting and the variation in detail, texture and color which he can give it."

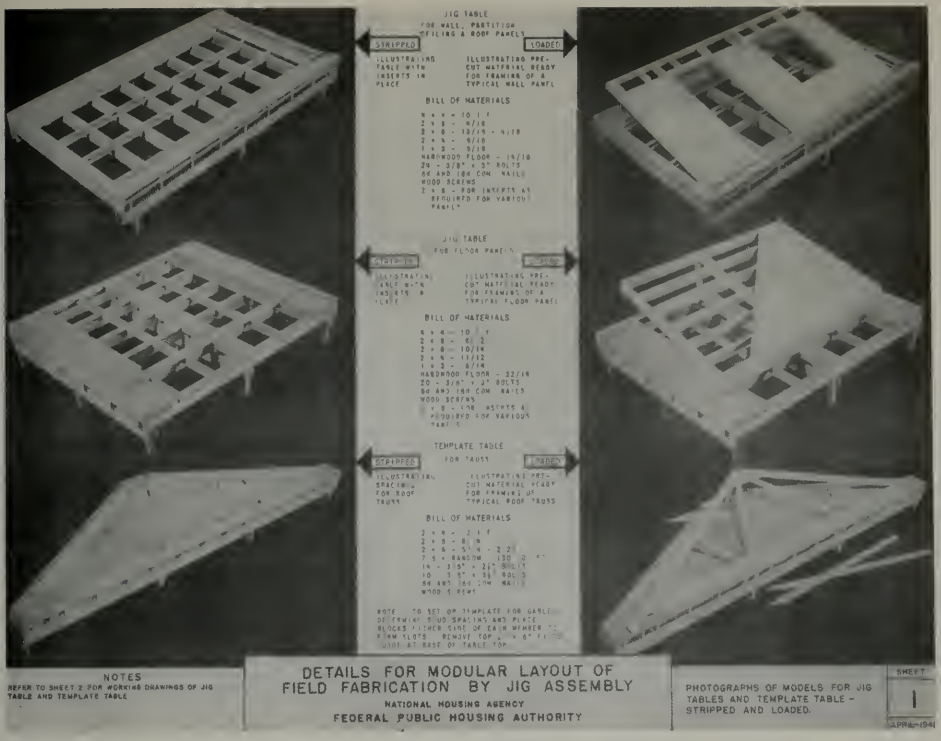
We in California have thought for some time that Mr. William Wilson Wurster was a REAL architect but we must have been mistaken for you are always mistaken when you disagree with an eastern editor.—Mark Daniels.

PREFABRICATION

(Continued from Page 29)

introduction to prefabricated methods. By some he has been lectured about the impossibility of getting anywhere that way, the failure to effect adequate savings, the costs of distribution, and the great difficulties involved. By others, he has been viewed with suspicion, lest in remaking drawings to conform to the prefabricated system of modules, the spirit of the design might be destroyed. Again he has found architects who were eager to find out how far the technique of prefabrication had been advanced and how they might become conversant with the progress already made. He has found architects who were ready to throw away their pencils and design in three dimensional models. He has found that such men were not only quick to realize the advantages of the new approach but were eager to join the campaign to break down many of the old prejudices and prerogatives which retarded progress.

It is architects of this type that the prefabricators are eagerly seeking. The prefabricators look upon open-minded architects as their strongest allies in the movement to get rid of mystery and red tape in the building industry. It is these architects whom the public will single out for reward, for the public will be the ultimate beneficiary. Let it be remembered that the public cares nothing about the prerogatives of making drawings. The public wants an increasingly better product for less money. The public will follow those who lead in this direction. Architects have a great part to play in the shaping of the future. To grasp the opportunity, architects must do more than talk at the prefabricators. They must come into tangible contact with the work under way, and be ready to shape their methods to give the public improved service.


NOTES
REFER TO SHEET 2 FOR WORKING DRAWINGS OF JIG TABLE AND TEMPLATE TABLE
DETAILS FOR MODULAR LAYOUT OF FIELD FABRICATION BY JIG ASSEMBLY
NATIONAL HOUSING AGENCY
FEDERAL PUBLIC HOUSING AUTHORITY
PHOTOGRAPHS OF MODELS FOR JIG TABLES AND TEMPLATE TABLE - STRIPPED AND LOADED.
SHEET
1

WAR HOUSING

A complete set of details for modular layout of field fabrication by jig assembly

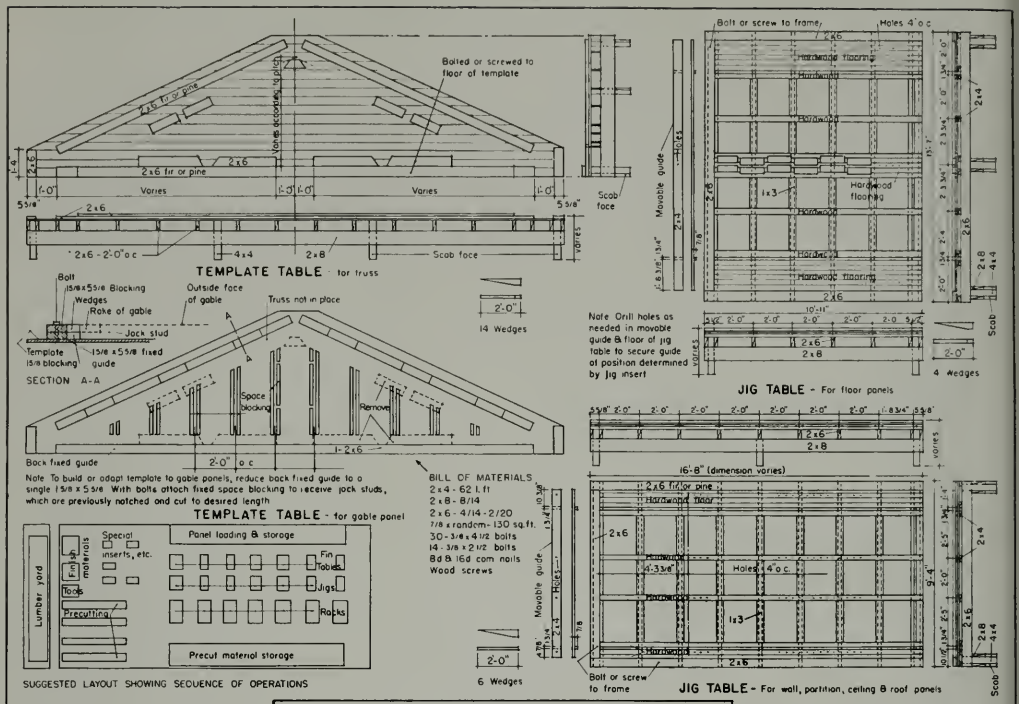
(Released by Federal Public Housing Authority, Washington, D. C.)

A set of working drawings for site fabrication of war housing projects has been released by the Federal Public Housing Authority. It is for the use of architects and contractors who are participating in the construction of homes for war workers.

The process of site fabrication outlined in the drawings is one of two prefabrication processes being used by FPHA for speedy erection of homes to meet pressing emergency needs. The other process is factory fabrication, by which panels and sections of houses are prefabricated in a factory or shop not located on the site where the houses will be erected. FPHA is currently building more than 45,000 homes by this factory fabrication process.

Site fabrication takes place on the housing site, rather than in a factory. The prefabrication methods are being used both for temporary housing to last the duration of the war, and for permanent homes to be used now by war workers and their families.

Turn to succeeding pages for complete set of working drawings.


Bolted or screwed to floor of template
2x6 fir or pine
Varies
Scab face
2x6
4x4
2x8
TEMPLATE TABLE - for truss
Bolt
Wedges
Rake of gable
Outside face of gable
Truss not in place
Jack stud
Template
guide
SECTION A-A
Space blocking
Remove
Back fixed guide
2'-0" o c
14 Wedges
Note To build or adapt template to gable panels, reduce back fixed guide to a single 1 5/8 x 5 5/8 With bolts attach fixed space blocking to receive jack studs, which are previously notched and cut to desired length
TEMPLATE TABLE - for gable panel
Lumber yard
Panel loading & storage
Special inserts, etc.
Fin. materials
Fin. Tables
Jigs
Tools
Precutting
Racks
Precut material storage
SUGGESTED LAYOUT SHOWING SEQUENCE OF OPERATIONS
BILL OF MATERIALS
2 x 4 - 62 l.ft
2 x 8 - 8/14
2 x 6 - 4/14 - 2/20
1/8 x random - 130 sq.ft.
30 - 3/8 x 4 1/2 bolts
14 - 3/8 x 2 1/2 bolts
8d & 16d com nails
Wood screws
Movable guide
6 Wedges
Bolt or screw to frame
Holes 4' o c
Hardwood flooring
Hardwood
1x3
Note Drill holes as needed in movable guide & floor of jig table to secure guide at position determined by jig insert
JIG TABLE - For floor panels
16'-8" (dimension varies)
2x6 fir or pine
Holes 4'-4" o c
JIG TABLE - For wall, partition, ceiling & roof panels

NOTES

WORKING DRAWINGS ON THIS SHEET REFER TO SHEETS 1 AND 3

DETAILS FOR MODULAR LAYOUT OF FIELD FABRICATION BY JIG ASSEMBLY

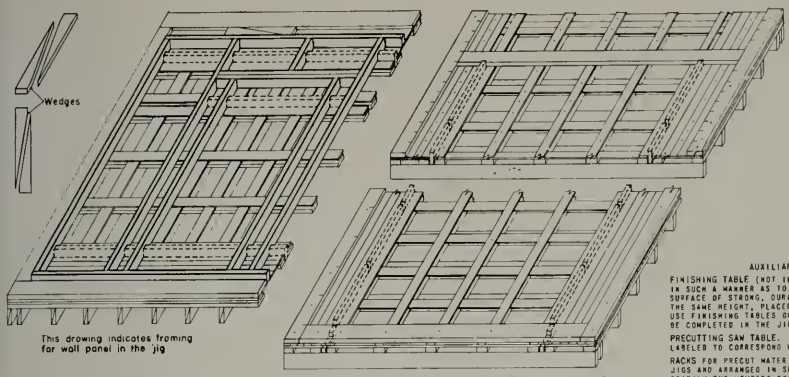
NATIONAL HOUSING AGENCY

FEDERAL PUBLIC HOUSING AUTHORITY

TEMPLATE TABLE FOR TRUSSES & GABLES • JIG TABLE FOR FLOOR PANELS • JIG TABLE FOR WALL, PARTITION, CEILING & ROOF PANELS • SUGGESTED PLANT LAYOUT

SHEET 2

APRIL-1942



This drawing indicates framing for wall panel in the jig

JIGS

JIG TABLE AS SHOWN IS INTERCHANGEABLE FOR ALL PANEL FORMING EXCEPT ROOF TRUSSES AND GABLES. ONCE PANEL LENGTH AND SPACING OF MEMBERS HAVE BEEN DETERMINED, JIG INSERTS CAN BE LAID OUT TO CORRESPOND WITH ANY OF THE VARIOUS PANELS TO BE MADE. THESE INSERTS WHEN PLACED IN THE JIG TABLE AND LOCKED IN POSITION WITH THE MOVABLE GUIDE DETERMINE THE FRAMING AND SIDE OF THE PANEL. THE VARIOUS STEPS IN LAYOUT OF INSERTS AS SHOWN ARE DESIGNED TO INSURE ACCURACY IN PLACING OF MEMBERS AND OVERALL DIMENSIONS OF FINISHED PANEL. THIS IS THE HEART OF THE SYSTEM AND ACCURACY ATTAINED HERE IS RESPONSIBLE FOR THE SPEED AND ECONOMY THROUGHOUT THE ENTIRE OPERATION.

FRAMING OF GABLES AND TRUSSES IS DONE ON A FIXED JIG OR TEMPLATE TABLE.

AUXILIARY TABLE AND RACKS

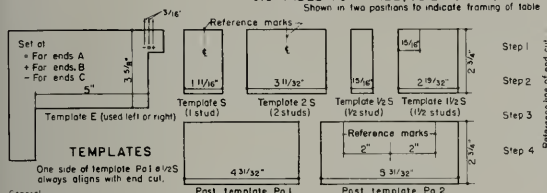
FINISHING TABLE (NOT ILLUSTRATED) SHALL BE CONSTRUCTED IN SUCH A MANNER AS TO PROVIDE A SMOOTH, FLAT WORKING SURFACE OF STRONG, DURABLE MATERIAL. TABLE SHOULD BE THE SAME HEIGHT, PLACED WITHIN FOUR FEET OF JIG TABLE. USE FINISHING TABLES ONLY FOR THOSE PANELS WHICH CANNOT BE COMPLETED IN THE JIG.

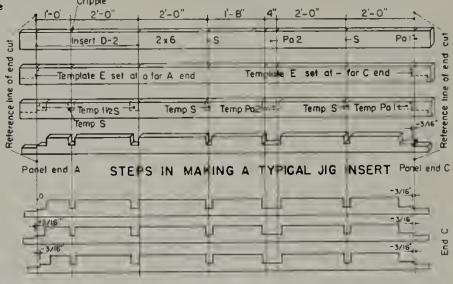
PRECUTTING SAW TABLE. STOPS ON TABLE SHOULD BE SET AND LABELED TO CORRESPOND WITH THE MEMBERS TO BE CUT.

RACKS FOR PRECUT MATERIALS SHOULD BE MAINTAINED NEAR JIGS AND ARRANGED IN SUCH A MANNER AS TO INDICATE READILY THE MEMBERS CONTAINED.

JIG TABLE FOR WALL, CEILING AND ROOF PANELS

Shown in two positions to indicate framing of table





General

The 4' locations of panel ends, studs, cripples and inserts are marked on the top edge of the 2 x 6 using a metal tape. Lines for cutting ends and notches are drawn on the side of the 2 x 6 using the above templates. In cutting out notches remove lines with saw cut. Do not cut to line.

Other templates for posts (Po) may be required (See Sheet 5)

Normal end to the module line — End A

End + 3/16" short panel lengths where necessary to maintain full length of panel — End B

End - 3/16" which allows tolerance for long runs of panels — End C

NOTES

SEE SHEET 5 FOR TYPICAL INTERIOR AND EXTERIOR WALL PANELS SHOWING STUD SPACINGS; A, B & C PANEL ENDS, ETC.

DETAILS FOR MODULAR LAYOUT OF FIELD FABRICATION BY JIG ASSEMBLY

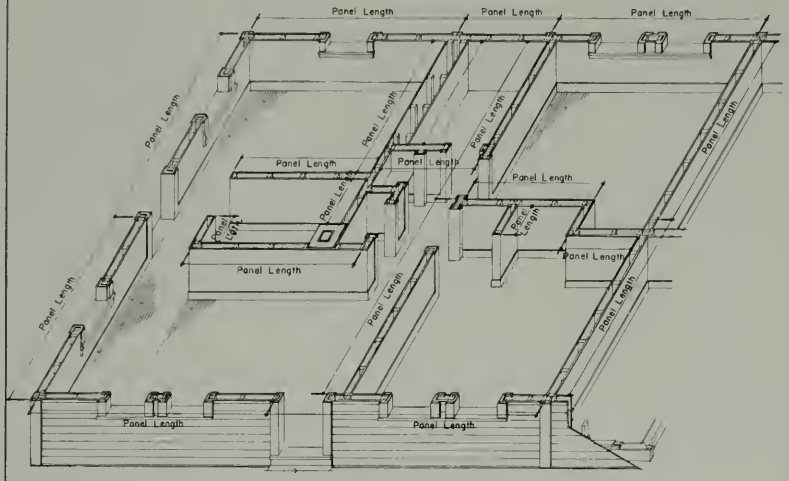
NATIONAL HOUSING AGENCY

FEDERAL PUBLIC HOUSING AUTHORITY

JIG TABLE
TEMPLATES FOR NOTCHING
INSERTS • JIG INSERT CUTTING
PROCEDURE.

SHEET 3

APRIL-1942



SUGGESTED PANEL LAYOUT

MODULAR LAYOUT AND JIG ASSEMBLY

A SIMPLIFIED METHOD OF DESIGNING BUILDING LAYOUT WHICH WILL REDUCE DRAFTING AND CONSTRUCTION TIME. ALL DIMENSIONS ON LAYOUT ARE NOMINAL.

ELIMINATES THE REPETITIVE REDRAWING OF STRUCTURAL ASSEMBLY DETAILS

SIMPLIFICATION OF DESIGN RESULTS FROM THE APPLICATION OF A SINGLE DIMENSIONAL UNIT, BOTH VERTICALLY AND HORIZONTALLY, TO THE BUILDING STRUCTURE, OPENINGS AND FINISH.

THE SYSTEM MAKES FOR ACCURACY IN THE ASSEMBLY OF EACH UNIT AND FOR EASE IN THE COORDINATED ASSEMBLY OF THE WHOLE.

ACHIEVES GREATER ACCURACY AND LESS CHANCE FOR ERROR IN ESTIMATING BY THE ELIMINATION OF FRACTIONAL INCHES.

ALLOWS GREATER SPEED AND LOWER COST OF FIELD ERECTION BY THE REDUCTION OF FIELD CUTTING AND FITTING.

PROVIDES OPPORTUNITY FOR DEVELOPING ORGANIZED BUILDING PRACTICE WITH BETTER CONTROL OF FIELD OPERATIONS.

IN DESIGNING PANELS CONSIDERATION SHOULD BE GIVEN TO WEIGHT INVOLVED AND SHOULD BE LIMITED TO SIZES THAT CAN BE EASILY HANDLED WITHOUT THE USE OF SPECIAL EQUIPMENT.

MAINTAIN FOUR-INCH NOMINAL MODULE THROUGHOUT DESIGN OF UNIT PLANS FOR EFFICIENCY IN THE USE OF ASSEMBLY AND FIELD ERECTION.

ESTABLISH A KEY OR SYSTEM OF LABELING PANELS TO INDICATE POSITION AND ORDER OF ERECTION NECESSARY.

LABELING OF PANELS OCCURRING IN THE FOLLOWING DRAWINGS HAS NO RELATION TO THE SYSTEM OTHER THAN TO DIFFERENTIATE ONE FROM THE OTHER AND TO SERVE AS AN ILLUSTRATION.

FOR FLOOR PLANS ADAPTABLE FOR JIG ASSEMBLY, SEE SERIES OF "PLANS BASED ON STANDARDS FOR DEFENSE HOUSING."

NOTES

NOTE TO ARCHITECT - THIS SERIES OF DRAWINGS HAS NOT BEEN PREDICATED ON THE USE OF ANY PARTICULAR UNIT PLAN. TYPICAL PANELS AS SHOWN ARE BASED ON THE USE OF A 4" INCREMENT, (MODULE). IN DESIGNING A UNIT PLAN EMPLOYING THIS SYSTEM, THE LAYOUT WILL BE SIMPLIFIED IF MADE ON A 4" GRID

DETAILS FOR MODULAR LAYOUT OF FIELD FABRICATION BY JIG ASSEMBLY

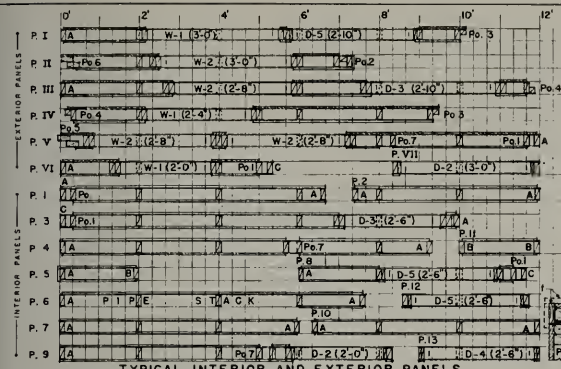
NATIONAL HOUSING AGENCY

FEDERAL PUBLIC HOUSING AUTHORITY

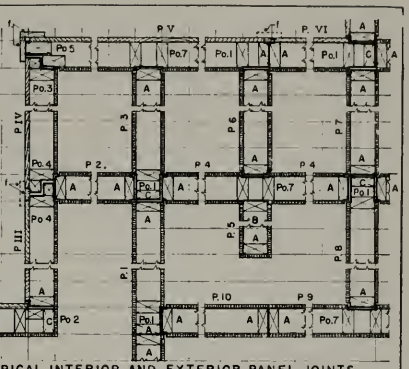
ISOMETRIC SHOWING TYPICAL PANEL ASSEMBLY.

SHEET 4

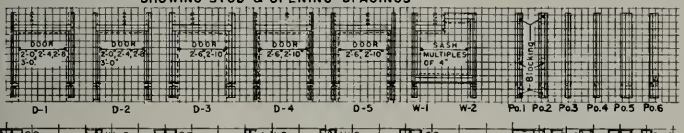
APRIL-1942



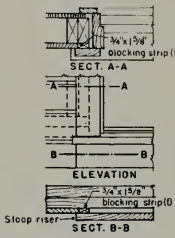
TYPICAL INTERIOR AND EXTERIOR PANELS
SHOWING STUD & OPENING SPACINGS



TYPICAL INTERIOR AND EXTERIOR PANEL JOINTS



DETAILS SHOWING RELATION OF TRIM TO DOOR & WINDOW INSERTS
(Typical inserts will be assembled as a separate operation on a template table for that purpose)



DETAILS OF EXTERIOR
DOOR SILL & FRAME

NOTES & SYMBOLS

P= Panel
D= Door insert
W= Window insert
Po = Post insert
S = Stud
f = Field application

Using template tables, assemble door, window & post inserts as a separate operation. Nail together conventionally & rack near wall & partition jig tables, ready for further assembly

NOTES

SEE SHEET 3 FOR TEMPLATE DETAILS FOR MARKING NOTCH AND END CUTS ON JIG INSERTS FOR END CONDITIONS A, B AND C

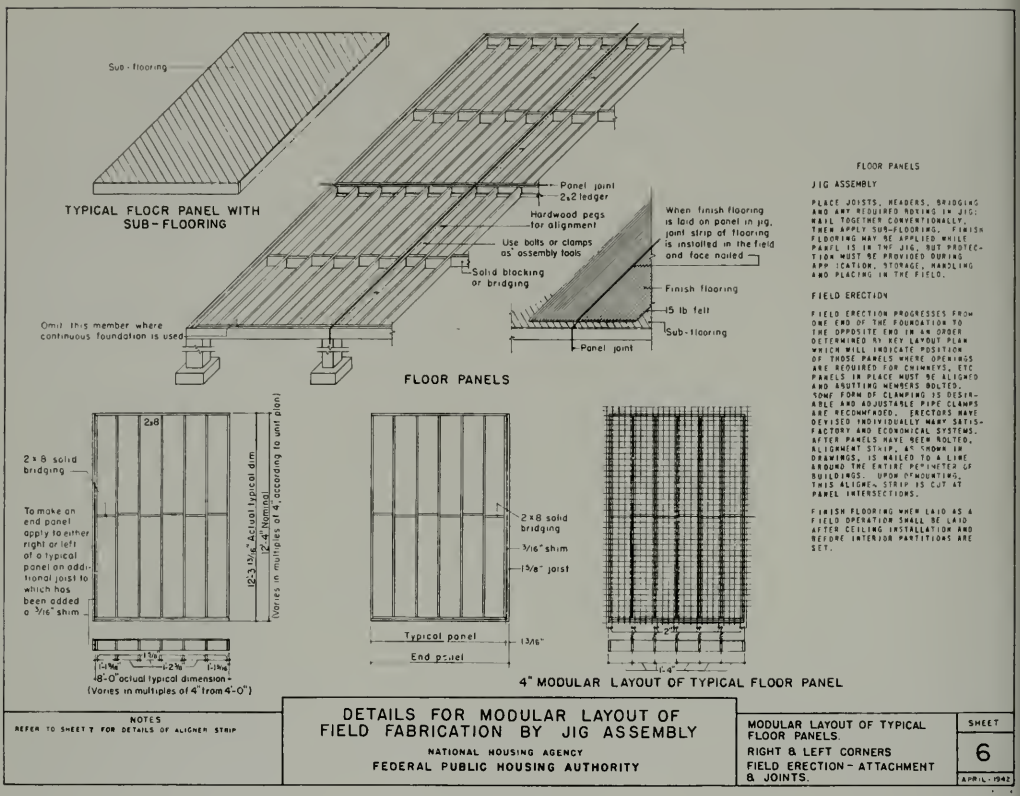
DETAILS FOR MODULAR LAYOUT OF FIELD FABRICATION BY JIG ASSEMBLY

NATIONAL HOUSING AGENCY
FEDERAL PUBLIC HOUSING AUTHORITY

MODULAR LAYOUTS OF TYPICAL INT. & EXT. PANELS; INT. & EXT. PANEL JOINTS, DOOR, WINDOW & POST DET'S.

SHEET 5

APRIL-1942


Sub-flooring
TYPICAL FLOOR PANEL WITH SUB-FLOORING
Panel joint
2x2 ledger
Hardwood pegs for alignment
Use bolts or clamps as assembly tools
Solid blocking or bridging
When finish flooring is laid on panel in jig, joint strip of flooring is installed in the field and face nailed
Finish flooring
15 lb felt
Sub-flooring
Panel joint
Omit this member where continuous foundation is used
FLOOR PANELS
2x8
2 x 8 solid bridging
To make an end panel apply to either right or left of a typical panel an additional joist to which has been added a 3/16" shim
12'-3 13/16" Actual typical dim
12'-4" Nominal
(Varies in multiples of 4", according to unit plan)
1'-3 9/16"
1'-3 9/16"
1'-2 9/16"
1'-1 9/16"
8'-0" actual typical dimension
(Varies in multiples of 4" from 4'-0")
2 x 8 solid bridging
3/16" shim
1 3/8" joist
Typical panel
End panel
13 3/16"
2'-0"
1'-4"
4" MODULAR LAYOUT OF TYPICAL FLOOR PANEL

FLOOR PANELS

JIG ASSEMBLY

PLACE JOISTS, HEADERS, BRIDGING AND ANY REQUIRED NOGGING IN JIG; NAIL TOGETHER CONVENTIONALLY. THEN APPLY SUB-FLOORING. FINISH FLOORING MAY BE APPLIED WHILE PANEL IS IN THE JIG, BUT PROTECTION MUST BE PROVIDED DURING APPLICATION, STORAGE, HANDLING AND PLACING IN THE FIELD.

FIELD ERECTION

FIELD ERECTION PROGRESSES FROM ONE END OF THE FOUNDATION TO THE OPPOSITE END IN AN ORDER DETERMINED BY KEY LAYOUT PLAN WHICH WILL INDICATE POSITION OF THOSE PANELS WHERE OPENINGS ARE REQUIRED FOR CHIMNEYS, ETC. PANELS IN PLACE MUST BE ALIGNED AND ABUTTING MEMBERS BOLTED. SOME FORM OF CLAMPING IS DESIRABLE AND ADJUSTABLE PIPE CLAMPS ARE RECOMMENDED. ERECTORS HAVE DEVISED INDIVIDUALLY MANY SATISFACTORY AND ECONOMICAL SYSTEMS. AFTER PANELS HAVE BEEN BOLTED, ALIGNMENT STRIP, AS SHOWN IN DRAWINGS, IS NAILED TO A LINE AROUND THE ENTIRE PERIMETER OF BUILDINGS. UPON DEMounting, THIS ALIGNMENT STRIP IS CUT AT PANEL INTERSECTIONS.

FINISH FLOORING WHEN LAID AS A FIELD OPERATION SHALL BE LAID AFTER CEILING INSTALLATION AND BEFORE INTERIOR PARTITIONS ARE SET.

NOTES

REFER TO SHEET 7 FOR DETAILS OF ALIGNER STRIP

DETAILS FOR MODULAR LAYOUT OF FIELD FABRICATION BY JIG ASSEMBLY

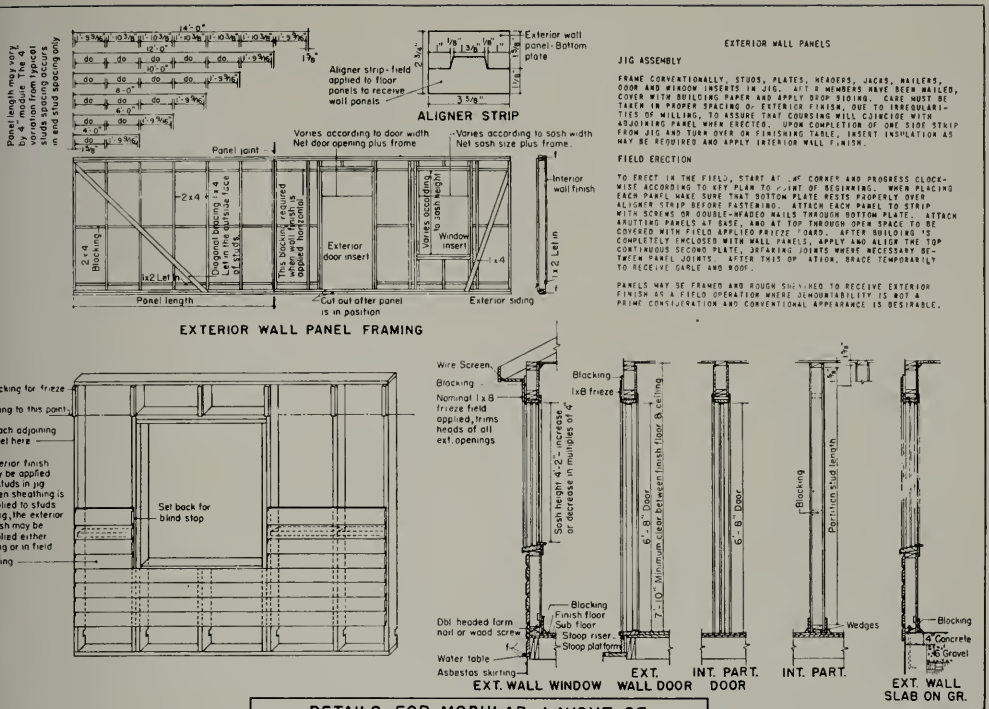
NATIONAL HOUSING AGENCY

FEDERAL PUBLIC HOUSING AUTHORITY

MODULAR LAYOUT OF TYPICAL FLOOR PANELS.
RIGHT & LEFT CORNERS
FIELD ERECTION – ATTACHMENT & JOINTS.

SHEET 6

APRIL · 1942


Panel length may vary by 3" increments from typical studs spacing occurs in end stud spacing only
14'-0"
12'-0"
10'-0"
6'-0"
4'-0"
Aligner strip - field applied to floor panels to receive wall panels
Exterior wall panel - Bottom plate
ALIGNER STRIP
Varies according to door width Net door opening plus frame
Varies according to sash width Net sash size plus frame.
Panel joint
2x4 Blocking
Diagonal bracing 1x4 Let in the outside face of studs
1x2 Let in
This blocking required when wall finish is applied horizontally
Exterior door insert
Varies according to sash height
Window insert
1x4
Interior wall finish
1/2 Let in
Panel length
Cut out after panel is in position
Exterior siding
EXTERIOR WALL PANEL FRAMING
Blocking for frieze
Siding to this point
Attach adjoining panel here
Exterior finish may be applied to studs in jig When sheathing is applied to studs in jig, the exterior finish may be applied either in jig or in field
Siding
Set back for blind stop
Wire Screen
Blocking
Nominal 1 x 8 frieze field applied, trims heads of all ext. openings
Sash height 4'-2" increase or decrease in multiples of 4"
Dbl headed form nail or wood screw
Water table
Asbestos skirting
EXT. WALL WINDOW
Blocking
1x8 frieze
6'-8" Door
7'-10" Minimum clear between finish floor & ceiling
Finish floor
Sub floor
Stoop riser
Stoop platform
EXT. WALL DOOR
6'-8" Door
INT. PART. DOOR
Blocking
Partition stud length
Wedges
INT. PART.
Blocking
Concrete
Gravel
EXT. WALL SLAB ON GR.

EXTERIOR WALL PANELS

JIG ASSEMBLY

FRAME CONVENTIONALLY, STUDS, PLATES, HEADERS, JACKS, RAILERS, DOOR AND WINDOW INSERTS IN JIG. AFTER MEMBERS HAVE BEEN NAILED, COVER WITH BUILDING PAPER AND APPLY DROP SIDING. CARE MUST BE TAKEN IN PROPER SPACING OF EXTERIOR FINISH, DUE TO IRREGULARITIES OF MILLING, TO ASSURE THAT COURSING WILL COINCIDE WITH ADJOINING PANEL WHEN ERECTED. UPON COMPLETION OF ONE SIDE STRIP FROM JIG AND TURN OVER ON FINISHING TABLE, INSERT INSULATION AS MAY BE REQUIRED AND APPLY INTERIOR WALL FINISH.

FIELD ERECTION

TO ERECT IN THE FIELD, START AT ONE CORNER AND PROGRESS CLOCKWISE ACCORDING TO KEY PLAN TO POINT OF BEGINNING. WHEN PLACING EACH PANEL MAKE SURE THAT BOTTOM PLATE RESTS PROPERLY OVER ALIGNER STRIP BEFORE FASTENING. ATTACH EACH PANEL TO STRIP WITH SCREWS OR DOUBLE-HEADED NAILS THROUGH BOTTOM PLATE. ATTACH ANY TRUSS PANELS AT EAVE, AND AT TOP THROUGH OPEN SPACE TO BE COVERED WITH FIELD APPLIED FRIEZE BOARD. AFTER BUILDING IS COMPLETELY ENCLOSED WITH WALL PANELS, APPLY AND ALIGN THE TOP CONTINUOUS SECOND PLATE, BREAKING JOINTS WHERE NECESSARY BETWEEN PANEL JOINTS. AFTER THIS OPERATION, BRACE TEMPORARILY TO RECEIVE GABLE AND ROOF.

PANELS MAY BE FRAMED AND ROUGH SHEATHED TO RECEIVE EXTERIOR FINISH AS A FIELD OPERATION WHERE DEMOUNTABILITY IS NOT A PRIME CONSIDERATION AND CONVENTIONAL APPEARANCE IS DESIRABLE.

NOTES

SEE SHEET 8 FOR DETAILS OF FIELD APPLICATION OF CORNICE

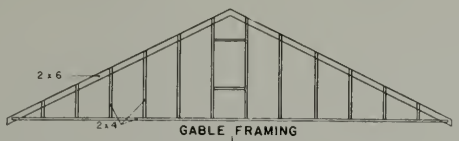
DETAILS FOR MODULAR LAYOUT OF FIELD FABRICATION BY JIG ASSEMBLY

NATIONAL HOUSING AGENCY
FEDERAL PUBLIC HOUSING AUTHORITY

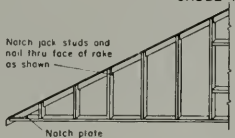
TYPICAL EXTERIOR WALL LAYOUT
SECT. THRU ALIGNER STRIP
SECTIONS THRU EXT. WALLS & INT. PARTITIONS.

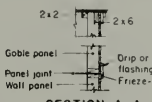
SHEET 7

APRIL-1942



GABLE FRAMING





SECTION A-A

GABLE PANEL

GABLES

JIG ASSEMBLY

FRAME GABLES IN JIG WITH NOTCH END OF JACK STUDS FOR RAKE FACING UP. COVER WITH SHEATHING PAPER AND APPLY EXTERIOR FINISH. CUT SIDING AT RAKE WITH POWER HAND SAW. STRIP JIG AND APPLY GABLE RAKE BOARDS WHILE ON FINISHING TABLE. LOUVER MAY BE INSTALLED AT THIS STAGE OF ASSEMBLY OR LATER DURING FIELD ERECTION.

FIELD ERECTION

IN THE FIELD, ERECT, PLUMB AND TIE IN POSITION WITH DOUBLE-HEADED NAILS OR SCREWS THROUGH BOTTOM PLATE INTO TOP PLATE OF WALL PANEL. PLACE ALL ROOF TRUSSES BEFORE SETTING SECOND GABLE.

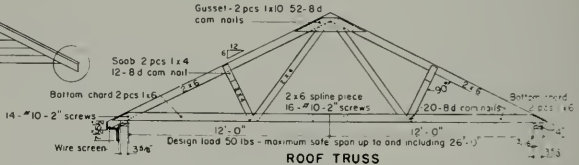
ROOF TRUSSES

JIG ASSEMBLY

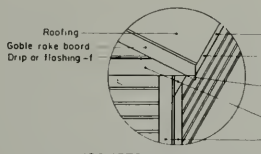
PLACE TOP CHORDS, INTERMEDIATE MEMBERS AND 2 x 8 SPLINE IN JIG, THEN ATTACH SCABS, ONE SIDE OF DOUBLE BOTTOM CHORD AND GUSSET PLATE AS SHOWN. REMOVE FROM JIG, TURN OVER ON FINISHING TABLE AND REPEAT FIRST OPERATION.

FIELD ERECTION

IN THE FIELD ERECTION, ATTACH TO TOP PLATE OF WALL SECTIONS WITH A SCREW THROUGH TOP CHORD. CARE MUST BE TAKEN IN MAINTAINING EXACT SPACING ON CENTERS, OTHERWISE DIFFICULTY WILL BE ENCOUNTERED IN THE INSTALLATION OF ROOF AND CEILING PANELS. WHEN TRUSSES ARE IN POSITION, ALIGN AND TEMPORARILY BRACE FROM LOWER SIDE OF TOP CHORD.


Gusset-2 pcs 1x10 52-8d com nails
Soab 2 pcs 1 x 4 12-8d com nail
Bottom chord 2 pcs 1x6
14-#10-2" screws
2 x 6 spline piece 16-#10-2" screws
20-8d com nails
Bottom chord 2 pcs 1x6
12'-0"
12'-0"
Wire screen
Design load 50 lbs - maximum safe span up to and including 26'-0"

ROOF TRUSS

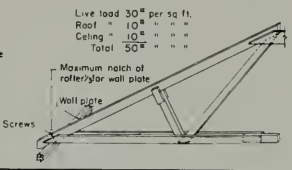

Roofing
Gable rake board
Drip or flashing-f
Facia-f
Scribe facia board to gable rake board before cutting
Cut off as a field operation after membering with frieze board of gable
Frieze-f
Corner boards-f

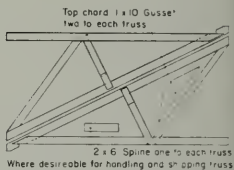
ISOMETRIC OF GABLE RAKE CORNICE & CORNER BOARD ASSEMBLY

Install soffit of cornice first-then frieze but do not cut at ends of bldgs until membered with corner board

Design load based on the following max loading:

Live load 30# per sq ft.
Roof " 10# " " "
Ceiling " 10# " " "
Total 50# " " "





Where desireable for handling and shipping truss may be divided and packed as shown

NOTES

SEE SHEET 7 FOR SECTION THRU CORNICE

DETAILS FOR MODULAR LAYOUT OF FIELD FABRICATION BY JIG ASSEMBLY

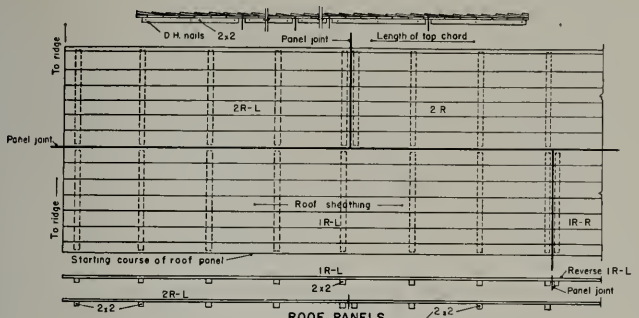
NATIONAL HOUSING AGENCY

FEDERAL PUBLIC HOUSING AUTHORITY

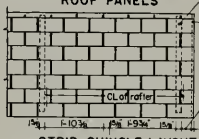
TRUSS DETAILS
GABLE FRAMING
GABLE PANEL & RAKE BOARDS
GABLE RAKE, CORNER BOARDS & CORNICE ASSEMBLY

SHEET 8

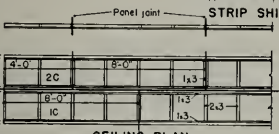
APRIL-1942



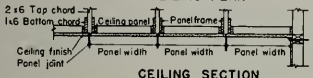
ROOF PANELS



STRIP SHINGLE LAYOUT

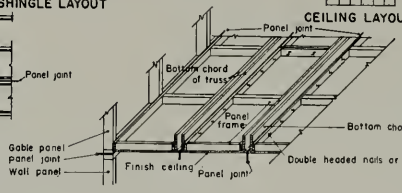


CEILING PLAN



CEILING SECTION

CEILING LAYOUT



ROOF PANELS

JIG ASSEMBLY

FRAME AND SHEATH IN JIG AND APPLY FELT WHERE REQUIRED. FINISH ROOFING MATERIAL MAY BE APPLIED TO PANELS WHILE IN THE JIG, OR WHERE FOUND TO BE MORE DESIRABLE OR ECONOMICAL APPLY IN THE FIELD AFTER PANELS ARE IN POSITION ON THE TRUSSES. WHEN ROOFING MATERIAL IS APPLIED TO PANEL WHEN IN THE JIG, LAYOUT AND SIZES OF SHINGLES SHOULD BE PREDETERMINED TO INSURE PROPER COURSING AND BREAKING OF SHINGLE JOINTS AT PANEL JOINTS.

FIELD ERECTION

IN THE FIELD, STARTING AT FRONT AND REAR EAVE SIDES, CONTINUE IN COURSES TO RIDGE. PLACE AND ATTACH PANELS TO TOP CHORD OF ROOF TRUSS WITH DOUBLE-HEADED NAILS OR SCREWS THROUGH SIDE OF 2 x 2 MEMBER.

CEILING PANELS

JIG ASSEMBLY

FRAME MEMBERS OF CEILING PANELS IN JIG ONLY. CARE MUST BE TAKEN TO INSURE A TRUE SURFACE BY MAKING CERTAIN THAT ALL MEMBERS REST ON JIG TABLE BEFORE NAILING. WHEN MEMBERS HAVE BEEN ATTACHED, TURN FRAME OVER ONTO FINISHING TABLE WITH UNDERSIDE OR TRUE SURFACE UP TO RECEIVE FINISH MATERIAL. WHEN CEILING FINISH IS OF A PERISHABLE MATERIAL, ADEQUATE PROTECTION SHOULD BE PROVIDED DURING ITS APPLICATION TO FRAMES AND WHILE STORED.

FIELD ERECTION

IN THE FIELD THE ORDER OF INSTALLATION SHALL FOLLOW COMPLETED TRUSS AND ROOF ERECTION. STARTING AT ONE END OF BUILDING, PLACE FRAME OF PANEL UP FROM UNDERSIDE TO POSITION WHERE FINISH STRIKES BOTTOM CHORD OF ROOF TRUSS. ATTACH WITH DOUBLE-HEADED NAILS OR WOOD SCREWS THROUGH SIDES OF PANEL FRAME TO BOTTOM CHORD OF ROOF TRUSS. BREAK JOINTS OF PANELS AS INDICATED IN LAYOUT. INSTALL ENTIRE CEILING OF DWELLING BEFORE SETTING INTERIOR PARTITIONS.

NOTES

DETAILS FOR MODULAR LAYOUT OF FIELD FABRICATION BY JIG ASSEMBLY

NATIONAL HOUSING AGENCY

FEDERAL PUBLIC HOUSING AUTHORITY

ROOF PANEL LAYOUT & JOINTS
CEILING " " " "
SECTION THRU CEILING

SHEET 9

APRIL-1942

IF YOUR CLIENT WISHES TO BUILD

HERE'S WHAT HE CAN DO

The Construction Conservation Order L-41, put into effect early in April by the War Production Board, is an assurance to home owners, store and factory owners that they can keep their buildings in sound condition by performing needed repairs and maintenance construction.

Coming after a period of rumors and uncertainty, it was welcome news to the thousands of small builders, building material dealers and suppliers.

Preliminary publicity on the new order gave many people the false impression that the American building industry was silenced for the duration. Fortunately, this is not to be the case. The government realizes, as the building industry has long maintained, that deliberate neglect of homes and factories would, in effect, hamper our war effort by impairing the shelter and productive facilities of the nation.

An analysis of Order L-41 reveals that it allows four major types of construction without permit or restriction anywhere in the country.

1. It does not limit or restrict the cost or extent of repairs and maintenance needed to keep a home, farm, store, factory or other building "in sound working condition," or to restore it to working condition "when such portion has been rendered unsafe or unfit for service by wear and tear, damage or other similar causes." All such repairs and maintenance may be conducted without permits.

2. It provides that new residential construction to the amount of $500 in any one year may be undertaken without permit. New agricultural consctruction to the amount of $1,000 is also permitted, while all other construction, including commercial, industrial, recreational, institutional, highway, roadway, sub-surface and utilities construction, whether privately or publicly financed, is permitted as long as its cost does not exceed $5,000.

3. It provides for reconstruction or restoration of residential construction damaged or destroyed after Dec. 31, 1941, by fire, flood, tornado, earthquake, act of God or the public enemy.

4. The order permits and encourages with priority assistance the private construction of defense houses, and other structures, and the conversion and alteration of houses in defense areas.

These provisions answer the questions of the home owner who wants to repair his front porch, repaint his house, insulate or apply a new roof of fire-resistant shingles. He can undertake such repairs and maintenance without permit and in any amount, according to the order as issued. If he desires to build a garage or fix up his basement or attic, he may do that, too, provided it costs no more than $500.

Stores, shops and small commercial construction costing not more than $5,000 may also be undertaken without permit anywhere in the country.

In addition, any person wishing to build any structure for an "essential civilian need or important to the war effort" can apply for a permit to build such a structure to the Federal Housing Administration. A considerable amount of work may be carried on under these permits.

Intended to direct as much material as possible to war use, the order yet makes generous and necessary allowance for needed civilian construction. It is the duty of the building industry now to see that every last ounce of material so employed shall help maintain and preserve our structures for the more efficient prosecution of the war.

Interiors of an aircraft factory "somewhere in England," C. Howard Crane, architect.

Much of the glass areas have been painted black for the duration, with some sections remaining unpainted to insure daylight and ventilation.

Pictures were taken by the architect before installation of machinery. Mr. Crane formerly practiced in Detroit.

FACTORY PLANNING IN ENGLAND TODAY

Blackout Solutions in Conserving Precious Man Hours of Production under Air-Raid Conditions

Two things still are free in England—light and air.

That's the explanation of C. Howard Crane, famous architect living in London but now in this country on a brief trip, in reply to questions regarding the type of industrial plants being built and planned for Great Britain.

Mr. Crane, who designs aircraft, munitions, steel and other types of industrial plants for the British government, in referring to free light and air, had in mind current factory black-out problems under bomb-raid conditions. He revealed that few windowless buildings had been built or were contemplated. Plenty of steel sash is still being utilized, he said, or the buildings are so constructed that sash areas can be quickly enlarged.

"Our problems in the building of factories in

England are a little different than those you have at the moment," Mr. Crane told a group of American architects, "because we are more exposed to the black-out problem and the effects of bombing.

"All new factories are designed with blast walls and older plants are now equipped with them in most instances. These walls usually are 14-inch, reinforced brickwork built 8-feet high to enclose every 10,000 square feet of working area, thus providing a series of enclosures something like a ship's bulkhead construction. Such walls not only protect the workmen but the machinery as well and serve to localize the effects of bombs.

"Experience has taught us not to attempt to design so-called bomb-proof roofs except for vital sections, such as boiler rooms, compressor houses and where transformers, switch gear and other equipment vital to plant operation are located.

"For example, we are using a thin asbestos roofing material. This is laid upon a steel framework and clipped to it. When a bomb hits such a roof the resultant explosion rips away the asbestos but usually leaves the steel framework practically intact so that new asbestos roofing can be installed quickly.

"This type of roof has replaced solid or so-called bomb-proof roof construction because we have learned by painful experience that when a bomb meets with such resistance it blasts and twists steel beams practically into hairpins and causes far more damage and delay than the comparatively 'resistless' type of roof.

"Black-out, of course, is a big problem and a great deal of study has been given this subject. Very few windowless buildings are being constructed. We have found them too expensive to build and operate. We keep in mind that such construction, for one thing, necessitates air ducts, fans, and other mechanical equipment requiring metals that are more urgently needed for other defense purposes.

"Solid walls are particularly dangerous under bombing conditions, and insofar as black-out is concerned, we have found a much more efficient method of construction.

"First of all, exterior walls, to a height of eight feet are of blast-wall design, 14" thick. Experience has shown that the 'splash' of an exploding bomb, scattering missiles, is kept relatively harmless because of the height of the wall.

"Above that height, regular steel sash is used in the walls. Temporarily, about one third of the sash area is being glazed, the remainder of the panes being filled in with asbestos, so that after the war these panels can be removed and glazed, and the buildings used in a normal manner. We want to utilize natural daylight and air as much as possible. In case of bombings, such walls are more quickly repaired and, of course, less costly.

"The most effective black-out method is accomplished by painting the glass in fixed sash wall areas black. Windows, to assure ventilation and light during the day, are not painted but are provided with black curtains. When in use during air raids, the curtains over-lap the painted sash areas six to eight inches around the windows.

"At the outset of war, when the Germans started to bomb our industrial areas, workmen left their places immediately the sirens sounded. In most cases the planes never actually reached the areas in which the plants were located so that many man hours were lost.

"Now we have roof spotters on constant duty. The first alert usually means that enemy planes are merely heading across the channel and workers keep right on the job. At night, for instance, no individual factory alarm is sounded unless the roof spotter actually sees or hears enemy planes.

"Then the spotter sounds a special klaxon, the workers quickly head for shelters (built under the factories in the newer plants), and all lights then are blacked out quickly by a central control switch. This new system has resulted, of course, in the saving of millions of man hours.

"Incidentally, we have hit upon a Service Box design which we have found very successful for production line floors in aircraft plants, and which might well be incorporated in American plants.

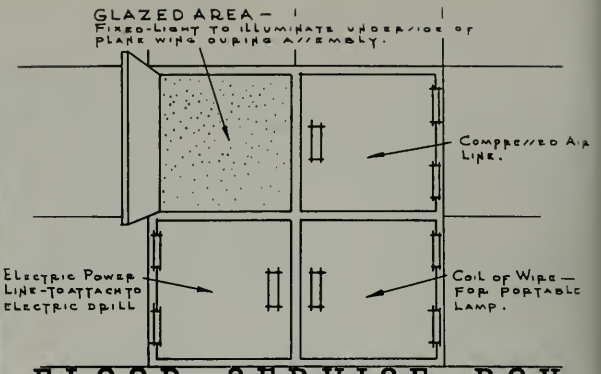
Aircraft factories "somewhere in England," designed by C. Howard Crane, formerly of Detroit, Michigan, now of London.

The pictures were taken prior to installation of machinery. After equipment was all in place blast walls were constructed.

This type of factory construction is recommended for Pacific Coast cities.

"The service box is usually two feet square, although it can be larger if found desirable. Built flush with the floor, it is in four sections, each with a manually operated door. In one compartment is a coil of power line for attaching to an electric drill. Another section has a compressed air attachment, a third has a portable coil for a small electric light and the fourth compartment is glazed with a diffusing type of glass. Underneath is a fixed light for illuminating the under side of a wing. When a plane being assembled reaches the point where work is required on under-side surfaces, these service boxes, located about every 10 feet along the production lines, speed up work remarkably well.

"As for rebuilding a post-war London, a great deal is going to depend upon one major development — the electrification of all railroads entering the city, bringing the trains into


GLAZED AREA—
FIXED-LIGHT TO ILLUMINATE UNDERSIDE OF PLANE WING DURING ASSEMBLY.
COMPRESSED AIR LINE.
ELECTRIC POWER LINE-TO ATTACH TO ELECTRIC DRILL
COIL OF WIRE—FOR PORTABLE LAMP.

FLOOR SERVICE BOX

Built into the floor at 10-foot intervals, the service box has stepped up production in aircraft plants in England, according to C. Howard Crane, American architect now residing in England and designing defense plants there.

Workers can handle a job faster through illumination of the under side of plane wings being constructed or assembled as they move along a production line. The other three compartments contain equipment quickly available and easily stowed away when not in use. The light source to illuminate the darkened areas under wings, even in the best-lighted plants, may consist of any flat type of glass, either a diffusing pattern or clear plate glass. A fixed light is underneath the glass.

the city underground, all of which was done 30 years ago along Park Avenue in New York City.

"A committee of British architects plans to visit this country in the near future.

"A modern skeleton frame building stands up to bombing very well and the damage is usually local. Walls are knocked in or sucked out but the structure still stands. When the same thing happens to wall-bearing buildings they, of course, collapse and are a total loss. We now really appreciate the desirability of thin walls, consisting of structural and other glasses or some other thin material.

BLACKOUT ENTRANCE DOORS

A practical and effective solution to the blackout entrance problem has been developed by an Eastern door manufacturer. Called the Folding Fabric Blackout Partition, the fixture provides a means of conforming to blackout standards and at the same time permits access to and exit from lighted buildings.

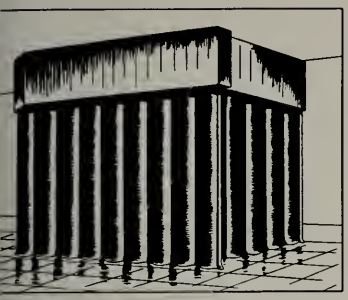
The new blackout partition works on an accordion-like principle, assuring unusual flexibility. The partition derives its accordion-like operation from the specially-designed hinge lock self spacing hinge plate at the top. Folding on itself, it has a roller assembly traveling easily on an overhead track. A vertical pipe connected to the lead trolley and extending to approximately six inches from the floor, concealed in a loosely fitted front hem, gives rigidity to the front of the partition and serves as a standard. No handles, pulls, or assist ropes are furnished. The flameproof blackout fabric is attached with grommets at the top and to one side of the hinged plates—hanging free. The height of the fabric is two inches greater than the height of the room, dragging the floor and assuring adequate coverage.

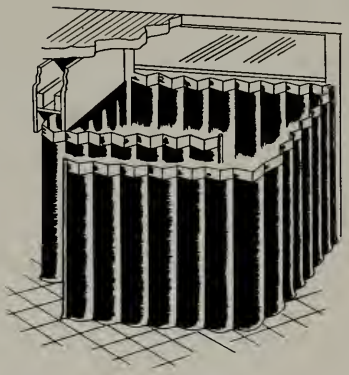
The partition presents a good appearance. Both sides of the hinge plate are covered with the same fabric. Valances are provided for each side to insure a perfect lightlock. The partition is attached to the wall with screws or nails to a covered wooden cleat extending the full length of the partition.

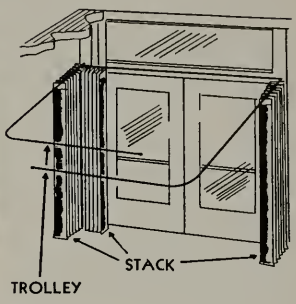
When not in use, the partition can be folded to the wall and no valuable space is consumed or lost.

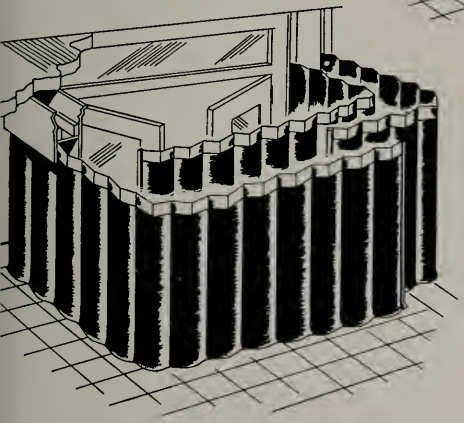
On the opposite page are eight small plan layouts which cover the principal door problems of factories, warehouses, stores, hotels, restaurants, office buildings, residences, etc. Adequate provision has been made for the ingress and egress of trucks (vehicles) and people. Manufacturers of the blackout partition are the New Castle Products, New Castle, Indiana.

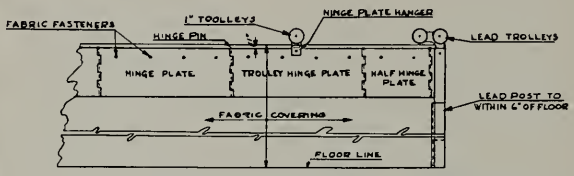
Lightlock and Blackout Problem for Entrances Solved





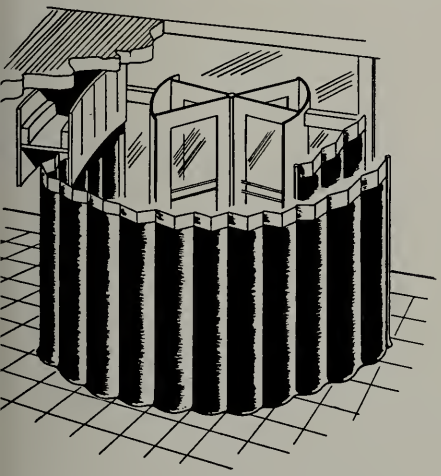


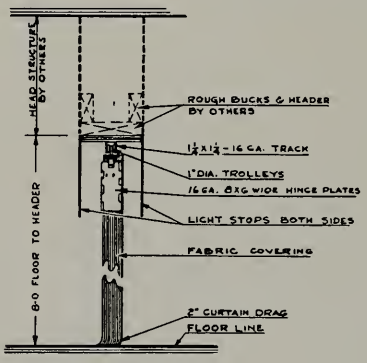




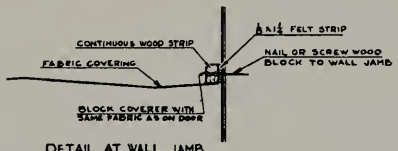
TYPICAL CURTAIN CARRIERS

PLAN SECTION AT LEAD POST




HEAD STRUCTURE BY OTHERS
8'-0 FLOOR TO HEADER
ROUGH BUCKS & HEADER BY OTHERS
1½ x 1½ - 16 GA. TRACK
1" DIA. TROLLEYS
16 GA. 8XG WIDE HINGE PLATES
LIGHT STOPS BOTH SIDES
FABRIC COVERING
2" CURTAIN DRAG
FLOOR LINE

VERTICAL SECTION


CONTINUOUS WOOD STRIP
FABRIC COVERING
1½ FELT STRIP
NAIL OR SCREW WOOD BLOCK TO WALL JAMB
BLOCK COVERED WITH SAME FABRIC AS ON DOOR

DETAIL AT WALL JAMB

ARCHITECTS IN SERVICE

A new member of Southern California Chapter, A. I. A., is Burnett C. Turner, until recently a member of the Northern California Chapter. Mr. Turner is doing his bit as technical director for the Los Angeles office, N. H. A., Federal Public Defense Housing.

S. B. Marston, architect of Los Angeles, is with the Southwestern Engineering Company, Luning, Nevada. Mr. Marston writes his Southern California friends he is enjoying his work "out on the desert, far from the maddening crowds—an ideal place," he adds, "for a Chapter meeting."

Richard L. Cook, formerly in the office of Architect William Harrison, Architects Building, Los Angeles, is a lieutenant in the Army, with headquarters somewhere behind the far eastern fighting lines. His messages to relatives and friends in the U. S. A. are outstanding for brevity, as witness these examples: "Dear Mother: Do not worry, everything fine. Love. Dick." (point of origin unknown); "Keep 'Em Flying. Answer. Love Dick.", and so on and so on.

CHARLES W. DICKEY

Charles W. Dickey, architect of the Claremont Hotel, in Berkeley, and at one time supervising architect for the Oakland School Department, died of a heart attack in Honolulu April 25th. Mr. Dickey, aged 72, had practiced his profession in Honolulu since leaving Oakland 18 years ago. He was born in Alameda.

In addition to designing many Honolulu government and commercial buildings, Mr. Dickey was architect of some of its most recently constructed school buildings. Before moving to the Hawaiian Islands he practiced in Oakland under the firm name of Dickey & Reid, and later as C. W. Dickey. Several Oakland skyscrapers are monuments to his ability. Mr. Dickey was a member of Northern California Chapter, A. I. A. He leaves a widow, a daughter, Mrs. Earl Thacker of Honolulu, a brother, Lyle Dickey, and two sisters, Mrs. James Dole of Honolulu, and Mrs. Grace Merrill of Piedmont.

INSTITUTE CONVENTION NEXT MONTH

The 74th annual meeting of the American Institute of Architects will be held in Detroit, Michigan, June 23 to 26. Simultaneously with the Institute meetings will be sessions of the State Associations of Architects, Council of Registration Boards, Association of Collegiate Schools of Architecture and the Producers Council. The Institute program this year is in charge of L. C. Dillenback and Clair W. Ditch, chairman of the Convention Committee from the Detroit Chapter. Post-war planning will be among the important subjects to be discussed by the convention.

WITH U. S. ENGINEERS CORPS

Clarence C. Dakin, architect, 303 18th Street, Marysville, California, is with the U. S. Army Engineers Corps.

MORE ARCHITECTS WANTED

Architects are being sought to fill Federal positions in the war program, it was announced recently by the Civil Service Commission at Washington. Optional fields of architecture in which persons may qualify are design, specification, and estimating. The salaries range from $2,000 for junior architects to $3,200 a year for associate architects. Sufficient eligibles at these grades to meet anticipated government needs were not obtained from the architect examination announced a year ago. No written test is required. Applicants' qualifications will be determined from their experience and training.

Architects appointed in design will survey work under construction, and do research in the factors affecting architectural design. Persons working in specifications, will write architectural specifications requiring knowledge of all classes of craftsmanship and materials. The duties of persons appointed for estimating work will be to estimate from sketches the costs involved in all phases of building.

For the $2,000 positions, completion of a four-year architectural or architectural engineering course at a recognized college or university is required. Senior students who will complete their college courses within six months from the date of filing applications may apply. For the other positions work in one of the options over a two-year period must be shown, in addition to appropriate architectural or engineering education or experience. Experience as draftsman, involving routine drafting or developing of plans not requiring basic original investigations or developments, will not be considered as qualifying. There are no age limits.

Qualified persons are urged to apply at once. Applications will be accepted at the Commission's Washington office until the needs of the service have been met. Forms for applying may be obtained at first- and second-class post offices throughout the country, or direct from the Commission.

ARCHITECTS AS EDUCATORS

Roberts S. Hutchins and Caleb Hornbostel, New York architects, have been appointed to the faculty of the Cooper Union Art Schools, it is announced by Dean Guy Gayler Clark. Leave of absence has been granted to Richard Boring Snow, architectural staff member, who has been named a defense building inspector for the United States Navy.

Charles Crispin, Junior Associate of the Southern California Chapter and his confrere, John Treacy, have received official notification of their appointment to teach a special course in Aircraft Production Illustration at U.S.C. This course is sponsored by the U. S. Department of Education and is part of the national defense training program.

ARCHITECTS OUTLINE CONSERVATION PLANS

Procedures for the conservation of critical materials by the building industry are being studied by committees of the American Institute of Architects and of the Producers' Council, national organization of manufacturers of building materials and equipment.

Suggestions which are to serve as a starting point for an extensive examination of the whole problem from the architectural point of view are embodied in a memorandum prepared by Harry R. Dowswell of New York, chairman of the Institute committee.

"The suggestions," the memorandum says, "are offered for comment and amplification. In order to visualize more easily the application of alternate materials, the suggestions have been set up under the usual trade divisions as follows:

"Concrete—Although reinforcing steel is not as critical as structural shapes, it is suggested that the use of reinforced concrete be limited to parts of structures where it is impracticable to use unreinforced concrete. For example, footings, foundation walls and piers can frequently be designed without reinforcing, whereas columns, girders, beams and floor slabs cannot.

"Where reinforced concrete is used care should be exercised to design with economy. A review of many reinforced concrete structures will disclose wastage in the use of steel. Local building codes should also be reviewed and efforts made to institute revisions wherever existing codes are out of line with modern methods of design.

"Structural steel—Use reinforced concrete wherever possible in structures requiring the use of non-combustible materials. Where the use of wood is permitted, a saving of steel can be made by returning to the types of wood construction used before the introduction of structural steel.

"There are thousands of masonry structures—domestic and commercial—over half a century old and still in a sound structural condition where wood lintels were used over masonry openings. Where the use of structural steel cannot be avoided, design with the greatest economy. Review local building codes and when stresses are out of line with the latest accepted practice, seek to have codes revised. When specifying paints for structural steel do not specify paints using critical materials.

"Granite and cut stone—Modern designs, employing granite or cut stone, require a great deal of metal, such as galvanized steel anchors, brass or bronze cramps and dowels. Designs should be studied for jointing so as to develop bond and render the use of metal for anchors, etc., unnecessary.

"Metal window frames and sash—The use of metal window frames and sash should be limited to defense construction where it is impossible to use alternate materials. Wood window frames and sash, together with a judicious use of glass blocks, can be used to solve practically all window problems except in industrial buildings requiring large glass areas. Where building codes are unduly restrictive changes in the code should be initiated.

"Roofing and sheet metal—All roofing and sheet metal requiring the use of copper, nickel, zinc or other critical materials should be considered as "out" for the duration and should not be specified even on defense work. Careful study will develop methods of flashing which avoid the use of metal and a little ingenuity which will devise methods readily permitting 'after the war' installation of permanent metals, if this is found desirable.

"Wood gutters are now in quite common use and their use may be readily extended. Exterior leaders, formed of bonderized and shop painted sheets, may be used initially and can be readily replaced when more permanent materials are available. Skylights of considerable area were formerly constructed of wood, and similar construction can be employed today.

"Carpentry — Modern plywoods, hardboards, and cement asbestos boards are materials which the clever designer may employ as alternate materials in the construction of unit partitions, water closet compartments, and even shower enclosures, all of which are now largely constructed of steel. The extended use of wood for window frames and sash, gutters, and skylights has been discussed.

"Architectural iron—Where non-combustible stairs are required reinforced concrete can be used, and the steel or iron usually employed in the construction of strings, risers, treads, newels, and balusters can be saved. On the exterior, at steps, porches, or other places where steel is frequently employed for railings, concrete or wood may be used.

"Saddles may be formed in cement or, where appearance is a factor, marble or slate offer a satisfactory alternate. For flagpoles, use wood or eliminate entirely for the duration. Many building codes require skylight guards above and below skylights. Many authorities question their necessity. An effort should be made to eliminate this requirement either permanently or for the duration.

"Architectural bronze—This group should be eliminated for the duration. Substitutes should be used temporarily and the work designed to permit replacement with permanent materials.

"Metal furring and lathing—Metal wall furring can be largely eliminated through the use of masonry furring. Where suspended ceilings cannot be eliminated, materials may be used for a plaster base which avoids the use of lath. In non-fireproof buildings, the use of metal lath may be avoided through the use of plaster boards, or dry wall construction may be adopted, that

is, the use of plywoods, hardboards, fibreboards, or gypsum board. A little ingenuity coupled with a thorough knowledge of these materials will result in a considerable saving of essential metals.

"**Interior marble, slate and structural glass**—Many of the water closet and shower compartment details based on these materials use a great deal more metal than is necessary. Architects should cooperate with producers in this group and adopt construction details which reduce the use of essential metals to the minimum.

"**Terrazzo**—Modern terrazzo work uses a considerable quantity of essential material. Joints employing non-essential materials should be developed, or the use of terrazzo should be discontinued in favor of tiles or marble.

"**Hollow metal**—The use of steel for door frames and trim (combination buck, frame and trim) should be eliminated in favor of wood. Where the use of a non-combustible material is an essential requirement, fire-proofed wood may be used. Fire-proofed wood may also be used for doors, base, and trim generally.

"**Weather strips**—The use of weather strips may have to be eliminated for the duration.

"**Paints**—Many of the paints heretofore in common use and some relatively new ones, such as rubber-base paints, will be unobtainable for the duration. Acceptable substitutes are being developed. Specification writers should become familiar with these new materials and alter previous practice accordingly."

A conservation program for critical materials used in electrical, plumbing, heating, and ventilating equipment will be submitted later.

BENEFIT BRIDGE PARTY

To benefit the Victory Fund, members of the San Francisco Architects Auxiliary and their friends enjoyed an afternoon of bridge on April 10 at the California Club, 1750 Clay Street, San Francisco.

The Auxiliary's Victory Fund is used for war work and relief work in connection with the war.

Mrs. Dodge A. Reidy acted as chairman of arrangements, assisted by Mrs. J. F. Beuttler, Mrs. Mario J. Ciampi, Mrs. Edmond P. De Martini, Mrs. H. J. Leasen, Mrs. Frederick W. Quandt, Mrs. Martin J. Rist, Mrs. Joseph Stewart and Mrs. Cris Runge.

NEW FIRM OF ENGINEERS

Robert A. Hudson and Robert E. Grady announce a partnership as Hudson & Grady, Engineers, with offices at 525 Market Street, San Francisco. Mr. Hudson was formerly associated with Thos. B. Hunter. A report that Mr. Hudson is in ill health is without foundation.

MEYER NEW TRAFFIC CZAR

Frederick H. Meyer, former president of Northern California Chapter, A. I. A., and former vice president of the American Institute of Architects, has been appointed director of San Francisco's wartime traffic situation. Mr. Meyer is eminently fitted for the position.

NEW ASSISTANT TO FRANK W. CLARK

Leonard D'Ooge, known to many readers of Architect and Engineer as Assistant Exhibit Coordinator for the California Commission during the Golden Gate International Exposition, and later head of the Leonard D'Ooge & Associates Advertising Agency in Oakland, has recently been appointed Administrative Assistant

LEONARD D'OOGE

to Director of Public Works Frank W. Clark. One of Mr. D'Ooge's accounts while operating the Oakland advertising firm was the S. T. Johnson Company, oil burner manufacturers. Johnson advertising copy, prepared by D'Ooge, appeared in both the Architectural Forum and Architect and Engineer and received marked recognition.

Prior to coming to California Mr. D'Ooge served for a time as purchasing agent of Dodge Bros. Motor Company, Detroit, and later was engaged in advertising and sales promotion in Chicago. His father, Dr. B. L. D'Ooge, was an American scholar of renown and author of many nationally used Latin and Greek text books. Mr. D'Ooge and his family have established a residence in Sacramento.

TO SUBSCRIBERS

If your copy of Architect and Engineer fails to reach you with customary regularity, please be patient. Due to the war and its accompanying demands on the postal service, unavoidable delays and confusions are likely to occur. Foreign subscribers may not receive their magazines at all due to censorship or absence of official clearance outside United States territory.

ARCHITECTS' BULLETIN

Issued For

THE STATE ASSOCIATION OF CALIFORNIA ARCHITECTS

Northern Section

STATE ASSOCIATION MEMBER
OF THE
AMERICAN INSTITUTE OF ARCHITECTS

Editor
Harris C. Allen

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WAR & POST-WAR PLANNING

Citizens' organizations have been formed recently to assist and expedite the work of local and State Planning Commissions. One is a San Francisco project sponsored by the Chamber of Commerce, etc., called the San Francisco Citizens' Master Plan Committee; and another is the Bay Regional Development Council, including representatives of a number of counties around the Bay. These are significant movements in which architects should take an active interest—as there are few citizens so well equipped by training or experience to grasp these problems as a whole.

In addition to this more or less permanent organizational program, the San Francisco Housing and Planning Association, sponsored by many other groups, called a one-day conference on wartime planning, on April 23 at the Palace Hotel in San Francisco. A very full program included addresses and discussions on war housing, transportation, the Master Plan, the city and the region, civilian defense, and rebuilding the blighted areas.

Naturally, among the leaders in discussion were architects, among them William Merchant, President of the Down Town Association of San Francisco; Gardner Dailey, Chairman of the Citizens' Master Plan Committee; Douglas Stone, of the San Francisco Planning Commission; and Albert Evers, San Francisco Housing Association. Representatives were present from our Association, from the Institute Chapter and from the San Francisco Society.

Urban Redevelopment

A timely and appropriate handbook on this subject, so obvious an element of post-war planning, has been published by the Federal Housing Administration (15 cents, Superintendent of Documents, Washington, D. C.). We quote from a review in the Architectural Forum:

"The Federal Housing Administration book, prepared under the direction of Assistant Administrator E. S. Draper, is an exceedingly thoughtful and objective examination of the complex problems to be met before planning is a fact, and a suggestion of some methods which might be used to solve them. No more valuable approach could have been developed at the present time.

"Basic is the concept that the community has a right—and a duty— to plan itself. It must function as an active partner in a going concern, not as a disinterested bystander. Its planning activities must be accepted as important by the whole citizenry, the program must be on a large and long-term scale, and the buildings involved must include housing for a wider income range than has been provided to date. This does not imply an extension of government subsidy, but merely an application of the principles of large-scale planning to dwellings for the middle income groups.

"While it has over a hundred pages, the scope of the subject approached in this book is so vast and so complex that the treatment approaches the form of a synopsis and any attempt to present a comprehensive review of the legal, economic and administrative proposals offered would take as much space as

the book itself. Boiled down to its bare essentials, the study is an attempt to view the urban problem as a whole, to consider measures which might be realized before the millenium, to reconcile the conflicts of interest that will necessarily arise, and to outline a possible course of action rather than establish an ironclad procedure. While there will inevitably be disagreement over many of the proposals (the desirability of a 'city realty corporation' might be one) it would be difficult indeed to quarrel with so realistic and objective an approach. If given the consideration it deserves, the FHA study could save the many groups concerned with the urban problem a great deal of time, trouble and money, for it is one of the most constructive publications to come out of the Government Printing Office in a long time. For those by whom any extension of government initiative is viewed with alarm, the closing paragraph may provide some reassurance: 'the primary purpose of this handbook is not to make easy the spending of large sums of money for work relief upon unplanned projects. It is concerned to see an effective partnership of private capital in planned undertakings of vital public interest. It attempts to establish a pattern for local thinking and action without which effective cooperation with Federal agencies, operating under such powers as the Congress may see fit to give, cannot be expected.' "

Air Raid Protection

News letter No. 5 was published April 14, 1942, and described measures being taken to establish uniform standards for the State, through cooperation with the State Defense Council, the State Architect, the Pacific Coast Building Officials Conference. This movement spread to Southern California, and the indications are that standard classifications of shelters will be recommended for use in building codes; probably for minimum splinter-proof shelter for schools, hospitals and industrial plants for the time being.

The ARP Advisory Board has also cooperated with local exhibits, directors of Air Raid Wardens Training Service, the Fire Underwriters' Forum, the Defense Council's evacuation committee and on radio programs. Its Bulletins have been requested from many quarters. Mr. Ward and his committee have evidently been very busy, and have not wasted their time.

Stanford University is offering a series of "Training Courses for War Industries," and we quote the following from their folder:

"FIRE PREVENTION AND PROTECTION ENGINEERING—

"Objective: To give training to engineers and architects in fire prevention and protection principles.

"Course Content: Fire loss and public responsibility; education. Construction; general considerations; fire resistance of materials and assemblies; classification of structures; structures for special purposes; exposures; building appurtenances; building to resist earthquakes and hurricanes. Hazards; general considerations; fire explosions and physical and chemical properties of materials; fire prevention methods; hazardous processes; solids; liquids; gases. Protection; general considerations; inside protection; outside protection; sprinkler protection; special systems; alarm and similar devices; public city protection; public rural protection; sabotage and arson.

"Prerequisite for Enrollment: Graduation in engineering or architecture or registration as a civil engineer or architect in California.

"Instructor: Marshall K. Rouse, Superintendent of Schedule Department, Board of Fire Underwriters of the Pacific.

"At San Francisco: Monday and Friday evenings, 7:00-9:00 in Room 237, Merchants Exchange Building, 465 California Street. First meeting, Friday, May 6, 1942. Class continues for 8 weeks, holding its final meeting on Monday, June 29.

Modern Houses

The San Francisco Museum has been showing an exhibit of houses designed by five California architects, whose work had been cited in a recent article by Talbot Hamlin. The architects: William Wurster, Dinwiddie and Hill, Hervey Clarke, Richard Neutra, and Harwell Harris. It was called the best domestic architecture being done in this country.

Donations

The State Association is pleased to acknowledge recent contributions of $200 from the Board of Fire Underwriters of the Pacific and $25 from the Architects' San Francisco Women's Auxiliary to further the studies of its Air Raid Protection Advisory Board in local methods for structural defense.

A $100 contribution was previously received from the Producers Council Club, representing national manufacturers of building materials and equipment.

The ARP Board's work includes adaptation of European information to suit California building conditions in the protection of building and the design of air raid shelters.

The board has been working with the State Defense Council's building codes sub-committee in preparing air raid shelter standards which could be used by California cities in writing their shelter ordinances.

Lest We Forget

From a recent editorial page in the San Francisco Chronicle we quote the following comments, which are equally appropriate to the building industry:

"The first page of the London Times weekly edition is regularly and almost exclusively occupied by advertisements of producers and dealers who for the duration have nothing to sell. Their advertisements express

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

Estimator's Guide

Giving Cost of Building Materials, Wage Scale, Etc.

Amounts given are figuring prices and are made up from average quotations furnished by material houses to San Francisco contractors. 3% Sales Tax on all materials but not labor.

All prices and wages quoted are for San Francisco and the Bay District. There may be slight fluctuation of prices in the interior and southern part of the state. Freight cartage, at least, must be added in figuring country work.

Bond—1½% amount of contract.
Government work ¾%.

Brickwork—

Common, $40 to $45 per 1000 laid, (according to class of work).
Face, $90 to $100 per 1000 laid, (according to class of work).
Brick Steps, using pressed brick, $1.00 lin. ft.
Brick Veneer on frame buildings, $1.00 sq. ft.
Common f.o.b. cars, $15.00 at yard. Cartage extra.
Face, f.o.b. cars, $40.00 to $60.00 per 1000, carload lots.

Building Paper—

1 ply per 1000 ft. roll	$3.50
2 ply per 1000 ft. roll	5.00
3 ply per 1000 ft. roll	6.25
Sisalkraft, 500 ft. roll	5.00
Sash cord com. No. 7	$1.20 per 100 ft.
Sash cord com. No. 8	1.50 per 100 ft.
Sash cord spot No. 7	1.90 per 100 ft.
Sash cord spot No. 8	2.25 per 100 ft.

Sash weights, cast iron, $50.00 ton.
Nails, $3.50 base.
Sash weights, $45.00 per ton.

Concrete Aggregates—

GRAVEL (all sizes) $1.45 per ton at bunker; delivered to any point in S. F. County $1.85.

	Bunker	Delivered
Top sand	$1.45	$1.85
Concrete mix	1.45	1.85
Crushed rock, ¼ to ¾	1.60	2.00
Crushed rock, ¾ to 1½	1.60	2.00
Roofing gravel	1.60	2.00
City gravel	1.45	1.85
River sand	1.50	1.90

Bank sand—$1.00 per cubic yard at bunker or delivered.

SAND—	Bunker	Delivered
River sand	$1.50	$1.85
Lapis (Nos. 2 & 4)	2.00	2.40
Olympia Nos. 1 & 2	1.80	2.20
Healdsburg plaster sand	$1.80	and $2.20
Del Monte white	50c	per sack

Common cement (all brands, paper sacks) carload lots $2.52 per bbl. f.o.b. car; delivered, $2.80; less than carloads delivered, 70c per sack.
Cash discount on carload lots, 10c a barrel, 10th Prox.; cash discount less than carload lots, 2%.

Atlas White, Calaveras White, Medusa White } 1 to 100 sacks, $2.00 sack, warehouse or delivery.

Forms, Labors average $40.00 per M.
Average cost of concrete in place, exclusive of forms, 35c per cu. ft.; with forms, 60c.
4-inch concrete basement floor ..... 12½c to 14c per sq. ft.
Rat-proofing 7½c
Concrete Steps ..... $1.25 per lin. ft.

Dampproofing and Waterproofing—

Two-coat work, 20c to 30c per yard.
Membrane waterproofing—4 layers of saturated felt, $4.50 per square.
Hot coating work, $2.00 per square.
Medusa Waterproofing, 15c per lb., San Francisco Warehouse.
Tricocel waterproofing.
(See representative.)

Electric Wiring—$12.00 to $15.00 per outlet for conduit work (including switches). Knob and tube average $3.00 per outlet.

Elevators—

Prices vary according to capacity, speed and type. Consult elevator companies. Average cost of installing an automatic elevator in four-story building, $2800; direct automatic, about $2700.

Excavation—

Sand, 60 cents; clay or shale $1 per yard.
Teams, $12.00 per day.
Trucks, $22 to $27.50 per day.
Above figures are an average without water. Steam shovel work in large quantities, less; hard material, such as rock, will run considerably more.

Fire Escapes—

Ten-foot galvanized iron balcony, with stairs, $150 installed on new buildings; $160 on old buildings.

Floors—

Composition Floors—22c to 40c per sq. ft.
In large quantities, 18c per sq. ft. laid.
Mosaic Floors—80c per sq. ft.
Duraflex Floor—23c to 30c sq. ft.
Rubber Tile—50c to 75c per sq. ft.
Terazzo Floors—45c to 60c per sq. ft.
Terazzo Steps—$1.60 lin. ft.

Hardwood Flooring (delivered to building)—

	13/16x2¼" T&G	⅝x2" T&G	⅝x2" Sq.Ed.
Clr. Otd. Oak	$144.00 M	$122.00 M	$141.00 M
Sel. Otd. Oak	118.00 M	101.00 M	114.00 M
Clr. Pla. Oak	120.00 M	102.00 M	115.00 M
Sel. Pla. Oak	113.00 M	92.00 M	107.00 M
Clr. Maple	125.00 M	113.00 M	

Wage—Floor layers, $12.00.
Note—Above quotations are all board measure except last column which is sq. ft.

Glass (consult with manufacturers)—
Double strength window glass, 20c per square foot.
Plate 80c per square foot (unglazed) in place, $1.00.
Art, $1.00 up per square foot.
Wire (for skylights), 40c per sq. foot.
Obscure glass, 30c to 50c square foot.
Glass bricks, $2.50 per sq. ft. in place.
Note—if not stipulated add extra for setting.

Heating—
Average, $1.90 per sq. ft. of radiation, according to conditions.
Warm air (gravity) average $48 per register.
Forced air, average $68 per register.

Iron — Cost of ornamental iron, cast iron, etc., depends on designs.

Lumber (prices delivered to bldg. site)—

No. 1 common	$43.00 per M
No. 2 common	41.00 per M
Select O. P. common	46.00 per M
2x4 No. 3 form lumber	32.00 per M
1x4 No. 2 flooring VG	90.00 per M
1x4 No. 3 flooring VG	85.00 per M
1x6 No. 2 flooring VG	96.00 per M
1¼x4 and 6, No. 2 flooring	95.00 per M

Slash grain—

1x4 No. 2 flooring	$65.00 per M
1x4 No. 3 flooring	62.00 per M
No. 1 common run T. & G.	48.00 per M
Lath	7.50 per M

Shingles (add cartage to price quoted)—

Redwood, No. 1	$1.20 per bdle.
Redwood, No. 2	1.00 per bdle.
Red Cedar	1.45 per bdle.

Plywood—Douglas Fir (add cartage)—
"Plyscord" sheathing (unsanded)
⅜" 3-ply and 48"x96" ..... $39.75 per M
"Plywall" (wallboard grade)—
¼" 3-ply 48"x96" ..... $43.70 per M
"Plyform" (concrete form grade)—
⅝" 5-ply 48"x96" ..... $117.30 per M
Exterior Plywood Siding—
⅜" 5-ply Fir ..... $132.00 per M
Redwood (Rustic) 1"x8" clear heart..$ 95.00 per M
$5 less per M for A grade.

Millwork—Standard.
O. P. $100 per 1000. R. W. rustic $120.00 per 1000 (delivered).
Double hung box window frames, average with trim, $6.50 and up, each.
Complete door unit, $10.00.
Screen doors, $3.50 each.
Patent screen windows, 25c a sq. ft.
Cases for kitchen pantries seven ft. high, per lineal ft., $8.00 each.
Dining room cases, $8.00 per lineal foot.
Rough and finish about 75c per sq. ft.
Labor—Rough carpentry, warehouse heavy framing (average), $17.50 per M.
For smaller work average, $35.00 to $45.00 per 1000.

Marble—(See Dealers)

Painting—

Two-coat work	per yard 50c
Three-coat work	per yard 70c
Cold water painting	per yard 10c
Whitewashing	per yard 4c

Turpentine, 65c per gal., in 5 gal. cans, and 55c per gal. in drums.
Raw Linseed Oil—95c gal. in light drums.
Boiled Linseed Oil—98c gal. in drums and $1.08 in 5 gal. cans.

White Lead in oil

	Per Lb.
1 ton lots, 100 lbs. net weight	11¾c
500 lbs. and less than 1 ton	12c
Less than 500 lb. lots	12½c

Red Lead and litharge

1 ton lots, 100 lbs. net weight	11¾c
500 lbs. and less than 1 ton	12c
Less than 500 lb. lots	12½c

Red Lead in oil

1 ton lots, 100 lbs. net weight	12¾c
500 lbs. and less than 1 ton	13c
Less than 500 lb. lots	13½c

Note—Accessibility and conditions cause some variance in costs.

Patent Chimneys—

6-inch	$1.25 lineal foot
8-inch	1.50 lineal foot
10-inch	2.25 lineal foot
12-inch	3.00 lineal foot

Plaster

Neat wall, per ton delivered in S. F. in paper bags, $17.60.

Plastering—Interior—

	Yard
1 coat, brown mortar only, wood lath	$0.50
2 coats, lime mortar hard finish, wood lath	.85
2 coats, hard wall plaster, wood lath	.72
3 coats, metal lath and plaster	1.25
Keene cement on metal lath	1.30
Ceilings with ¾ hot roll channels metal lath (lathed only)	.90
Ceilings with ¾ hot roll channels metal lath plastered	1.80
Single partition ¾ channel lath 1 side (lath only	.85
Single partition ¾ channel lath 2 inches thick plastered	$2.90
4-inch double partition ¾ channel lath 2 sides (lath only)	1.70
4-inch double partition ¾ channel lath 2 sides plastered	3.30
Thermax single partition; 1" channels; 2¼" overall partition width. Plastered both sides	2.50
Thermax double partition; 1" channels; 4¾" overall partition width. Plastered both sides	3.40
3 coats over 1" Thermax nailed to one side wood studs or joists	1.25
3 coats over 1" Thermax suspended to one side wood studs with spring sound isolation clip	1.45

Plastering—Exterior—

	Yard
2 coats cement finish, brick or concrete wall	$1.00
3 coats cement finish, No. 18 gauge wire mesh	1.75

Wood lath, $5.50 to $6.50 per 1000.

2.5-lb. metal lath (dipped)	.19
2.5-lb. metal lath (galvanized)	.21
3.4-lb. metal lath (dipped)	.22
3.4-lb. metal lath (galvanized)	.24

¾-inch hot roll channels, $72 per ton.
Finish plaster, $18.90 ton; in paper sacks.
Dealer's commission, $1.00 off above quotations.
$13.85 (rebate 10c sack).
Lime, f.o.b. warehouse, $2.25 bbl.; cars, $2.15
Lime, bulk (ton 2000 lbs.), $16.00 ton.
Wall Board 5 ply, $50.00 per M.
Hydrate Lime, $19.50 ton.

Plasterers Wage Scale	$1.67 per hour
Lathers Wage Scale	1.60 per hour
Hod Carriers Wage Scale	1.40 per hour

Composition Stucco—$1.80 to $2.00 sq. yard (applied).

Plumbing—

From $100.00 per fixture up, according to grade, quantity and runs.

Roofing—

"Standard" tar and gravel, $7.00 per sq. for 30 sqs. or over.
Less than 30 sqs. $7.50 per sq.
Tile, $20.00 to $35.00 per square.
Redwood Shingles, $7.50 per square in place.
Copper, $16.50 to $18.00 per sq. in place.
5/2 #1-16" Cedar Shingles, 4½" Exposure ..... 8.00 Square
5/8 x 16" — #1 Cedar Shingles, 5" Exposure..... 9.00 Square
4/2 #1-24" Royal Shingles, 7½" Exposure ..... 9.50 Square
Re-coat with Gravel, $3 per sq.
Asbestos Shingles, $15 to $25 per sq. laid.
Slate, from $25.00 per sq., according to color and thickness.
1/2 x 25" Resawn Cedar Shakes, 10" Exposure 10.50
3/4 x 25" Resawn Cedar Shakes, 10" Exposure 11.50
1 x 25" Resawn Cedar Shakes, 10" Exposure 12.50
Above prices are for shakes in place.

Sheet Metal—

Windows—Metal, $1.75 a sq. ft.
Fire doors (average), including hardware, $1.75 per sq. ft.

Skylights—(not glazed)

Copper, 90c sq. ft. (flat).
Galvanized iron, 40c sq. ft. (flat).
Vented hip skylights 60c sq. ft.

Steel—Structural (None available except for defense work)

$150 ton (erected), this quotation is an average for comparatively small quantities. Light truss work higher. Plain beams and column work in large quantities $140 per ton.

Steel Reinforcing (None available except for defense work).

$150 to $200 per ton, set.

Stone—

Granite, average, $6.50 cu. foot in place.
Sandstone, average Blue, $4.00. Boise, $3.00 sq. ft. in place.
Indiana Limestone, $2.80 per sq. ft. in place.

Store Fronts—

Copper sash bars for store fronts, corner, center and around sides, will average $1.00 per lineal foot.
Note—Consult with agents.

Tile—Floor, Wainscot, etc. — (See Dealers)
Asphalt Tile—18c to 28c per sq. ft. installed.

Wall Tile—

Glazed Terra Cotta Wall Units (single faced) laid in place—approximate prices:

2 x 6 x 12	$1.00 sq. ft.
4 x 6 x 12	1.15 sq. ft.
2 x 8 x 16	1.10 sq. ft.
4 x 8 x 16	1.30 sq. ft.

Venetian Blinds—

40c per square foot and up. Installation extra.

Windows—Steel

Factory type sash 30c ft.
Ventilators for steel sash $5.00 each.

1942 BUILDING TRADES WAGE SCALES FOR NORTHERN CALIFORNIA

*6-hour day **7-hour day

CRAFT	San Francisco	Alameda	Fresno	Marin	Sacramento	San Jose	San Mateo	Vallejo	Stockton
ASBESTOS WORKERS	$1.50	$1.25	$1.25	$1.37½	$1.12½	$1.25	$1.25	$1.25	$1.25
BRICKLAYERS	* 1.75	* 1.75	* 1.50	* 1.75	* 1.75	* 2.00	* 1.79-1/6	* 1.75	* 1.75
BRICKLAYERS' HODCARRIERS	* 1.35	* 1.25	* 1.05	* 1.25	* 1.05	* 1.35	* 1.35	* 1.40	* 1.14
CARPENTERS	1.37½	1.37½	1.25	1.37½	1.25	1.25	1.37½	1.25	1.25
CEMENT FINISHERS	1.37½	1.37½	1.25	1.25	1.25	1.50	.....	1.25	1.25
ELECTRICIANS	1.50	1.50	1.50	1.37½	1.50	1.50	1.50	1.50	1.37¼
ELEVATOR CONSTRUCTORS	1.61	1.56	1.50	1.61	1.61	1.50	1.50	1.56	.....
ENGINEERS: Material Hoist	1.50	1.37½	1.25	1.50	1.37½	1.62½	1.37½	1.37½	1.25
Piledriver	1.75	1.60	1.60	1.75	1.75	1.75	1.62½	1.75	.....
Structural Steel	1.75	1.60	1.60	1.75	1.75	1.75	.....	1.60	1.60
GLASS WORKERS	1.25	1.25	1.12½	1.25	1.12½	1.21	1.25	1.25	.....
IRONWORKERS: Ornamental	1.50	1.31¼	1.37½	1.31¼	1.37½	1.31¼	1.25	1.31¼	.....
Reinf. Rodmen	1.50	1.31¼	1.31¼	1.31¼	1.31¼	1.60	1.31¼	1.31¼	1.25
Structural	1.75	1.60	1.60	1.60	1.60	1.75	1.50	1.60	1.37½
LABORERS: Building	.85	.87½	.82½	.81¼	.85	.81¼	.81¼	.81¼	.80
Concrete	.87½	.93¾	.90	.81¼	.92½	.....	.85	.90	.90
LATHERS	* 1.75	* 1.75	* 1.50	* 1.75	* 1.60	* 1.75	* 1.75	* 1.50	* 1.50
MARBLE SETTERS	1.43¾	1.25	1.25	1.31¼	1.37½	1.25	1.31¼	.....	.....
MOSAIC & TERRAZZO	1.00	1.25	1.12½	1.12½	1.15-5/8	1.12½	.....	.....	.....
PAINTERS	** 1.37½	** 1.50	** 1.28-4/7	** 1.37½	1.25	** 1.35-5/7	** 1.42-6/7	** 1.50	1.25
PILEDRIVERS	1.47	1.40	1.40	1.50	1.40	1.47	1.40	1.40	.....
PLASTERERS	* 1.66-2/3	* 1.66-2/3	* 1.75	* 1.66-2/3	1.75	* 2.00	* 2.00	* 1.75	* 1.83-1/3
PLASTERERS' HODCARRIERS	* 1.50	* 1.45	* 1.40	* 1.40	* 1.18¾	* 1.35	* 1.75	* 1.40	* 1.50
PLUMBERS	1.52½	1.50	1.53-1/8	1.50	1.56¼	1.62½	1.50	1.50	1.37½
ROOFERS	1.37½	1.37½	1.12½	1.25	1.25	1.37½	1.25	1.25	1.25
SHEET METAL WORKERS	1.37½	1.37½	1.43¾	1.37½	1.50	1.50	1.37½	1.25	1.37½
SPRINKLER FITTERS	1.50	1.37½	.....	1.25	.....	1.62½	.....	1.50	.....
STEAMFITTERS	1.50	1.50	1.53-1/8	1.50	1.56¼	1.62½	1.50	1.50	.....
STONESETTERS (Masons)	* 1.50	* 1.75	1.50	* 1.75	* 1.75	* 1.50	1.75	* 1.75	* 1.50
TILESETTERS	1.50	1.37½	1.37½	1.37½	1.37½	1.50	1.50	1.37½	.....

Prepared and compiled by
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regret for this condition which exists for war reasons well known to their customers, but reassure them that when the war ends their familiar goods will be supplied, better than ever, if war industry experience has suggested improvements.

"The purposes of this advertising policy are several. It is good for public morale to know that men of reputation for sound judgment believe that the end of the war will be under conditions to permit what they promise and are willing to back their judgment with very costly advertising. It is prudent for industries that have created vast capital values of goodwill by long advertising to protect those assets by constant reminders. Also, by protecting public confidence in standards and brands long familiar in the system of private enterprise, the best assurance is given that industry in general and private economy will not be sovietized permanently by the pressure of war.

"The chorus of accusation that he is trying to sovietize industry which surprised Production Chief Donald Nelson when he suggested management-labor committees in war production, shows that many persons do not realize how far industry, economy, even individual action, have been sovietized or socialized. Government, regardless of outward forms, is boss in field, factory, office and the home. It is a temporary condition of trusteeship forced by war necessity.

"Mr. Nelson is one of the men in high places who never has shown leftist inclinations. His plan was for an idea exchange, not a usurpation of management functions. The suspicion against him or his plan was not primarily against either but a reaction against unfamiliar measures that many suppose to be symptoms of a policy in progress, instead of evidences of facts already accomplished.

"The resentment that greets every such symptom or evidence shows that the instinctive repugnance to socialization is strong. But there must be intelligence and action as well as instinct to prepare for taking back from the trusteeship when the time comes. Industry has been put through a fearful ordeal in changing over from consumer to war production. After war it must be tortured into a sudden switch back to consumer production.

"It will be costly in terms of advertising to keep alive consumer demand for familiar products which will support the return to consumer production by private enterprise instead of government monopoly. But it will be costly in terms of money that would do no one much good to save if we get socialized economy, with a new kind of money."

BUTLER STURTEVANT A MAJOR

The Seattle office of Butler Sturtevant, landscape architect, reports busy times under the name of Butler Sturtevant and Edwin Grohs. Vancouver housing projects are included in the firm's present activity. Mr. Sturtevant, by the way, is serving his country as a major in the Air Corps at Washington, D. C.

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PRIZES DOUBLED IN COMPRESSED AIR COMPETITION

Increased war production, by broadcasting new and unique industrial uses for compressed air, is the goal of the Blast the Axis Program conducted under Compressed Air Institute sponsorship. Opened as a compressed air idea contest before Pearl Harbor, it was intended to speed defense. Now the terrible crisis confronting the Nation, makes imperative wide dissemination of all ideas for speeding war production. Recognizing the contest's value in meeting this urgency, the Compressed Air Institute has redoubled its efforts to make it effective.

According to an announcement made by the Educational Director, two important new steps have been innaugurated. 1- The value of each cash prize has been doubled, bringing the total to $1000. 2- The duration of the program has been extended one month, to terminate July 1, 1942.

Nation wide in scope and open to virtually any one in industry, the contest is not restricted to employees of companies comprising the Compressed Air Institute. Skill in writing, grammatical construction, will have little weight in awarding prizes. It is not a competition in English composition. The idea and its value to industrial production is the important thing. Entries which have a bearing on some particular aspect of

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war production, whether or not the idea wins a prize, will be made available to appropriate Federal authorities, with full recognition to the contributor.

Bulletin board posters, describing the idea program, are available without charge. Address inquiries to the Educational Director's Office, East Orange, New Jersey.

TO CONSERVE VITAL MATERIALS

A nationwide drive to conserve critical building materials in cooperation with the War Production Board has been initiated jointly by the American Institute of Architects and the Producers' Council.

A joint body, comprising two collaborating committees, one representing the Institute and the other the Council, has been formed to administer the sweeping program. Forums will be held throughout the country to enlist local architects and manufacturers in the campaign. Proposals already have ben formulated for the elimination or curtailment of such critical materials as concrete, structural steel, roofing and sheet metal, lathing, paints, and granite and cut stone.

The Institute and the Council plan to issue separate series of documents containing advice on methods of conserving vital materials. The Institute will serve designers while the Council will provide information for manufacturers and their customers.

Harry R. Dowswell of the architectural firm of Shreve, Lamb, and Harmon, New York, has been named chairman of the Institute Committee, other members of which are Joseph D. Leland of Boston, Edmund R. Purves of Washington, Earl T. Heitschmidt of Los Angeles, William J. Sayward of Atlanta, Charles F. Cellarius of Cincinnati, and Abraham Levy of Philadelphia.

Albert B. Tibbets, sales promotion manager of the National Lead Company, New York, heads the Council committee.

One of the aims of the joint group will be to encourage research and the development of acceptable alternates for critical materials. The committees also will develop a program for participation of local A.I.A. Chapters and state societies and local Producers' Council Clubs to aid designers and manufacturers in adjusting their activities to the emergency conditions confronting the building industry. Also they will provide information on building products to persons in charge of design of construction projects.

Theodore I. Coe of Washington, D. C., technical secretary of the Institute, has been named technical secretary of the joint body. Under his direction the work of the two committees will be coordinated and a clearing house of information established.

"The technical secretary, on behalf of the collaborating committees," it is explained, "will request information from the architectural profession directly, or through Chapters of the Institute and state societies, and similarly from members of the Council. Individual

manufacturer members of the Council will be asked also to indicate whether any activities in the interest of simplification or substitution are being undertaken by industry committees and from whom this information may be obtained."

"ON THE JOB WITH OLD MISSION"

On the job with "Old Mission Cement" could well be the title of Corregidor war scene pictured in "Life" magazine (page 30, April 13, 1942) for directly behind the two sailors guarding the camouflaged entrance to the Navy tunnel in the big rock is a pile of cement with the name "Old Mission" plainly discernible on one of the sacks.

Old Mission Cement is manufactured by Pacific Portland Cement Company at their San Juan plant which, according to J. A. McCarthy, president, is now operating in conjunction with the Redwood City and Gold Hill, Oregon, plants to help supply the demands for strategic materials for war needs.

WELDED SHIP CONSTRUCTION

Featuring its May meeting Neil B. Musser addressed the members of the Structural Engineers Association of Northern California on "Modern Welded Ship Construction." A graduate of the U. S. Naval Academy at Annapolis and a former lieutenant commander in the Navy, Mr. Musser has had wide experience in the building of both commercial and war ships and is now associated with the newly established West Coast offices of the U. S. Maritime Commission.

SAN FRANCISCO SECTION, A. S. C. E.

"Wartime Bridge Construction Problems," was the subject of an interesting and informative talk by Fred W. Panhorst, bridge engineer for the California State Division of Highways, at the regular meeting of San Francisco Section, A. S. C. E., at the Engineers Club April 21. Mr. Panhorst gave an outline of some of the devices his department has developed for building adequate bridges with the limited materials at hand, describing design considerations for converting these structures into standard types of permanent bridges. The talk was graphically illustrated with lantern slides.

Recently President Frank E. Bonner sent out a letter and questionnaire to members to obtain a line on possible employment openings for undergraduate civil engineering students during the summer vacations. A committee to direct this activity is composed of Messrs. E. M. Murphy, Louis H. Oppenheim, Fremont E. Roper, Fred L. Weiss and Clement T. Wiskocil, chairman.

CONSTRUCTION SUPERINTENDENTS

The following notice from the Civil Service Commission, Washington, D. C., may be of interest to construction superintendents who failed to apply last year for this work.

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There may be qualified persons available now who were formerly employed in work affected by the government's war program. Persons who are qualified and available are urged to apply at once. Announcement 217, giving further information, may be obtained, with the proper application forms, at any first- or second-class post office or from the U. S. Civil Service Commission, Washington, D. C.

PORTLAND CHAPTER NOTES

At the March 17th meeting of Oregon Chapter, A.I.A., President Roi Morin announced that Arthur Riehl had made application for the Langley Scholarship.

Alec Miller, sculptor, was a guest, and the meeting adjourned early so that members could attend Mr. Miller's lecture at the Art Museum.

Messrs. Van Evera Bailey and Bernard A. Heims have been elected to Institute membership.

The regular April meeting of the Chapter was held at Lloyd's Clubhouse on the 21st. An entertainment feature was the showing in color of the motion picture, "Early American Dwellings," accompanied by a word description by Thomas A. Carney.

Frank Roehr has submitted his application for transfer from Chapter Associate to Institute membership.

Donald Wm. Edmundson has submitted his application for Institute membership, and Victor E. Cochran an application for Junior Associate. Cordon R. Ries has submitted his application for Student Associate.

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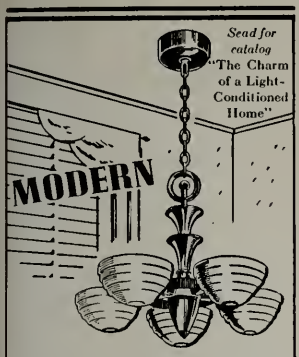

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PANEL SYSTEM FOR ARCHITECTS

Through a selective system developed by the American Institute of Architects, the Federal Government now has ready access to architectural talent in all parts of the country, according to Edmund R. Purves of Philadelphia, Washington representative of the Institute.

Each of the Institute's seventy-one Chapters has prepared a panel of architects and architectural organizations qualified to participate in the war housing program. These panels, constituting a regional inventory of the nation's architectural resources, have been turned over to the N.H.A. to serve as a guide in the selection of architects for housing projects.

"In this novel procedure," Mr. Purves explains, "the Institute does not select, or recommend for selection, any architects. It merely cooperates with the governmental agencies to the extent of furnishing them information relative to the availability of qualified firms. Panels are drawn up by the Institute without respect to membership therein."

In the four major sources of construction—the War Department, Navy Department, housing, and industry, the contribution of the architects continues to be extensive, Mr. Purves reports. "There is scarcely a large project emanating from either the War or Navy Departments which is not entrusted to an architect or a combination of an architect and engineer, and in the Navy one finds virtually a similar situation," he says.

"In the industrial construction program the selection and employment of the architect is generally directed by the industry itself. It is in the field of war housing that the architect in moderate practice finds an opportunity for service."

The panel system, Mr. Purves points out, is functioning effectively both from the standpoint of the architectural profession and of the Government. "Under the present procedure, blanket instructions were issued to all Chapters of the Institute to prepare panels of architects for housing projects within their Chapter areas, to be used if, as, and when the F.W.A.

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might have need of using them for the selection of architects.

"These panels were to be drawn up without respect to affiliation with any professional organization and were to include all architects qualified for housing projects within the Chapter area. This meant the consideration of those firms completely equipped to render architectural engineering services; of those firms not completely equipped but prepared to engage immediately upon the work by the addition of engineering and other related elements; and, lastly, those architects not necessarily immediately prepared but nevertheless worthy of consideration.

"To date practically all of the Chapters have responded and the agency now has in its possession sets of panels covering the entire United States.

"Since the inauguration of the panel system, housing has passed from the hands of the F.W.A. to the newly-formed N.H.A. All of the records relating to housing, including the panels, have been turned over to the N.H.A. and the Institute has been assured that the N.H.A. is giving the panels every consideration before selecting architects for housing projects."

BATTLE OF MATERIALS

Impressive progress in the "Battle of Materials" on the home front has been made in the past three months by the cooperative efforts of manufacturers, architects, and engineers, according to Colonel Raymond F. Fowler, Chief of the Supply Division, Corps of Engineers, U. S. Army.

Continued effective cooperation of all groups engaged in construction assures final victory in this important sector, Colonel Fowler asserted in a recent symposium on "Conservation of Critical Materials" sponsored by the Producers' Council, national organization of manufacturers of building materials affiliated with the American Institute of Architects.

The wartime construction projects of the Corps of Engineers include a great variety of items, Colonel Fowler explained. "We are building airfields, ports, cantonments, roads, railways,

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BATTLE OF MATERIALS

(Continued from Page 60)

munitions factories, dams, power plants, storage depots and many other installations," he said.

"There is no simple way of illustrating the variety of our construction work but, to illustrate its magnitude, I can cite the approximate cost of the work now on our books. The figure is in excess of six billion dollars.

"By virtue of the very size of this program, it is evident that revisions in design or specifications for the saving of essential materials for military purposes represent immense economies over such a broad front. What we are trying to do is to squeeze every last possible ounce of precious war material off the construction program.

"One of the major activities on our program is the erection of hangars, storage depots and similar installations. In these structures we have made extensive use of wood trusses. On the new storage depot program alone we expect to employ around 35,000 wood trusses, thereby releasing over 200,000 tons of steel. That much steel, it is estimated, will build 7,500 medium tanks.

"Less spectacular but equally illustrative is the case of the prosaic grease interceptors used in cantonment mess halls. Normally, they have been made of cast iron. Now we are substituting vitreous china, effecting a saving in excess of 800 tons of much needed metal.

"For many years industry has regarded jute as a necessary basis for caulking sewage and water pipe lines. We have recently developed a substitute consisting of cotton braid impregnated with paraffin, and are now endeavoring to have it placed in production. Thus, instead of using up a war material that is rapidly becoming scarcer, we will provide an alternate manufactured from an agricultural product of which the nation has a great surplus.

"In their construction activities, the Army Engineers are overlooking no bets in the attempts to save critical materials of all sorts. We have reduced our copper estimates by 80 per cent and our zinc estimates by around 84 per cent. Copper today is far more valuable than gold as a war metal. We all know what the situation is concerning rubber. Our new estimates indicate a saving that will meet the rubber requirements of several thousand fighting planes. Aluminum long ago led the march of war metals taken out of the program and the procession is still growing.

"There is more to this business of conservation, however, than the mere substituting of less-critical materials for more-critical ones. Like others in the constructing and producing businesses, we are getting more out of each piece of material used. For example, we are now studying an increase in the allowable working stresses for structural and concrete reinforcing steel."

Revolutionary development in the field of construction will emerge from the wartime necessity of conserving critical materials, Captain L. B. Combs, assistant chief of the Bureau of Yards and Docks, Navy Department, predicted.

"Our country is full of ingenious people and I look for very revolutionary and unique designs, methods and materials to come out of this situation and be produced and used as substitutes," Captain Combs declared. "The ingenious producers are going to be the busy ones."

Lessing J. Rosenwald, chief of the Bureau of Industrial Conservation, War Production Board, said that one of the great difficulties encountered by the Bureau is the "strip tease."

"We find that architects and engineers generally have not been designing these various projects with the critical material situation foremost in their minds," Mr. Rosenwald explained. "Consequently, after the projects are on paper and all designed, it is necessary for us to make numerous changes which, if undertaken originally, would not have been necessary."

Specifications alone will not promote conservation, according to Stephen F. Voorhees, Special Advisor, Construction Branch Production Division, W.P.B., who said:

"The job of designing, producing and making available certain materials must be done by the producers. It cannot be done by the architect; it cannot be done by the owner. It is the combined effort of these three elements — the owner, the designer and the material producer — at the time and at the point of the beginning of the project design, that will produce the greatest effect."

WAR HOUSING

Delay in placing before Congress proposed legislation increasing the amount of FHA Title VI insurance, and otherwise amending the Act, is causing concern in government as well as in building circles.

Houses to take care of war workers are now being built rapidly and inexpensively by private builders under Title VI, but FHA has reached the legal limit of total insurance under the law and will accept no more applications. Maximum insurance allowable is $300,000,000. It is proposed to increase this to $800,000,000. When this is done, private builders are ready to continue to provide the building determined necessary by the government.

It is to be hoped there will be no delay in removing an unnecessary obstacle to the provision of housing needs for the war program.

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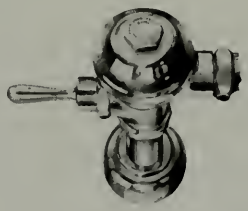

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ARCHITECT AND ENGINEER

COMING ISSUES

With the showing of Roi Morin's work in this issue, the policy of devoting frequent issues to the work of one architect or firm of architects, will be discontinued and plans are in the making for a series of post-war housing numbers that should be of vital interest to the profession and others concerned with the community problems of building and planning after the war.

Other coming features will include a review of the accomplishments of the Housing Authority of the City and County of San Francisco, with illustrations of completed projects as well as drawings of improvements that have been authorized but not yet started. Mark Daniels will give you the story. Identified with these major projects are many of San Francisco's foremost architects.

The nearly completed Pueblo del Rio Housing Project in Los Angeles, also will be very fully described and illustrated in an early issue. Paul Williams is chief architect of this undertaking.

Not only San Franciscans but the nation at large will find interest in pictures and text of the soon-to-be-completed Union Square Garage, a construction and engineering project without a prototype in this country. Described by experts, illustrated with drawings and photographs made especially for Architect and Engineer readers, here will be a number you can ill afford to miss.

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YOU can afford and *must* have a vacation. Hotels in Southern California are continuing their rates at pre-war levels. There is a hotel or resort in Southern California for every income and every budget. Eliminate high transportation costs and you will find that a Southern California vacation costs you no more than living at home. And it's false economy not to give the "human machine" its needed rest and relaxation.

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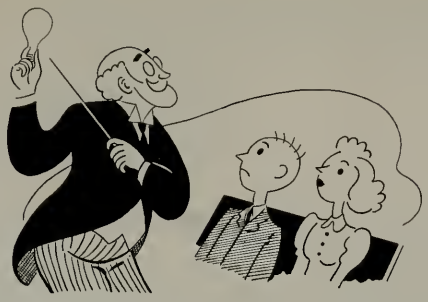

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T F Dull brown, green, or grey paint reflects only about 5 per cent of the light falling on it, and absorbs about 95 per cent.

T F An I. E. S. study lamp gives me between 30 and 35 footcandles of light on the reading surface of my desk.

T F Reading a brightly lighted page when the rest of the room is dark causes eyestrain and fatigue.

T F I need three times as much light to read a newspaper as I need to read a well-printed book.

T F A footcandle of light from a flame-tint or other colored bulb costs me many times as much as from an inside frosted bulb. The color holds back most of the light and lets only rays of its own color through. An inside frosted bulb lets virtually all light through.

T F "Sifting" light through a diffusing bowl makes it soft and soothing to the eyes and eliminates shadows and glare.

T F Paint, dye, and other pigments are NOT color—they merely reflect selected light rays and I see these rays as color. Color exists only in light, and the more clear light I have, the better all colors appear.

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RUNNING FIRE — By MARK DANIELS, A. I. A.

• *BROKEN GLASS*

When a law is passed ordering the destruction of property to enforce a former law that has been approved to protect that property, there is something wrong with the law, its enforcement, or both. Property which is protected by Federal law is being destroyed by law every minute in every day in the year. Despite the fact that most liquor bottles have embossed on them in the glass of the bottle the warning, "Federal law forbids the sale or re-use of this bottle," every cafe owner or bartender is ordered to break the bottle when it is empty or pay a heavy fine. If the Federal law forbids the sale or re-use of the bottle, why break it? Have we lost confidence in our law enforcement agencies that we pass one law to protect a commodity and another to destroy it?

This unnecessary smashing of liquor bottles does not seem to fit in with today's cry for drastic economy. No matter what are the excuses and explanations, other than the volume of work it gives the bottle manufacturers, and there are many, there is no logic in destroying any legally manufactured article to prevent its unlawful use. Further, many whiskies are put up in identical bottles. The only difference is in the label and there is adequate protection against illegal use of labels on whiskey bottles as well as innumerable others. If the law requiring the smashing of whiskey bottles is a good one, why not extend it to milk and wine bottles and yet the wine merchants are glad to use their bottles over and over again.

Yes, we pass a law prohibiting the sale or re-use of certain bottles, then we pass another law enforcing the destruction of said bottles to prevent the breaking of the first law. We also have a law forbidding arson. Perhaps we should burn the buildings down so the law can't be broken.

• *HISTORIC MONUMENTS*

Glancing over the office book shelves, my eyes rested on the five volumes of "Historic Monuments of London," printed by His Majesty's Stationery Office for the Royal Commission on Historical Monuments. The volumes are profusely illustrated with halftones, line drawings, floor plans of cathedrals and churches, details of mouldings, carvings, stained glass and countless other elements.

Now that Hitler has enjoyed for more than a year his penchant for destruction, these volumes in themselves have become historic monuments, for they constitute about the only authoritative compendium extant that presents a pictorial record of the great wealth of spiritual, traditional and structural beauty of a period in civilized development of which there remains little but a glowing memory.

• *THE HONEY POTS*

An old friend dropped into my office a few weeks ago. Right now he is very wealthy. (Rich is the word, I believe.)

"You ought to go back to Washington," he said. I replied that if they wanted me I was ready to go anywhere; that I had filed my qualifications.

"That will do no good," he said. "You have to be there." Whereupon I told him that Washington had given out the word that personal appearance was frowned upon. "I can see that you are not interested," he said, rising to leave. "But if you really want a fat one you'll have to go to Washington, for there's where all the honey pots are."

Later I recalled a draughtsman who had been discharged from one of the leading architectural offices in San Francisco for inefficiency and who proved to be holding a very good job within a month in Washington, D. C. Then several other similar instances came to my mind and I began to think it over. No doubt it is true that Washington officials do not want applicants to appear in person but it is also true that many plans are being knocked out by men discharged by superior men who were unable to get the same job from a distance.

You may miss a little pollen but you don't have to go from plant to plant to get a little nectar if you can dive right into the honey pot.

• *ANOTHER ALIBI*

The war has given the white collars an honorable excuse for poverty.

• *FOR VICTORY*

Never was a phrase developed for the furthering of an honorable cause that it was not either run into the ground or perverted to an unworthy cause, and the phrase "For Victory" is no exception. Everything is now said to be "For Victory." We raise prices for victory, we cheat for victory, we lie for victory, we build for victory, we organize for victory, we disorganize for victory. Of course we live for victory and therefore we might say that all we do is for that purpose but why not apply the slogan only to those things directly concerned with victory?

• *CONSOLIDATION*

Consolidation has a slightly different meaning from organization, as it is applied to the architect and engineer office. Generally speaking, it implies the bringing of several branches under one head, but when it means the banding together of several offices to get government work it is a waste of time if the government is going to take over all the work anyhow, and later it will be difficult to "unconsolidate," which necessity is bound to come about sooner or later if Washington continues to establish new standards for every problem that may confront an architect or an engineer.

Some day a lady may say, "Now that I have a little money again, I'm determined to put a real kitchen in my house," and be told by her friend, "Oh, you must send to the American House & Home Kitchen Bureau in Washington, D.C. They worked out all the details during the last war." Standardizing is greatly needed, particularly in machine parts, screws, lumber and many other things, but it can be, and is being carried too far when they begin to standardize personal tastes and needs.

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Priorities? There are none on Kraftile. Used for partitions, Kraftile Wall Units replace steel stud and reinforced concrete construction. Tests prove they have 10 times the state-required seismic resistance. They stand up under the hardest abuse. No danger of fire, water, decay or termite destruction.

Upkeep? Kraftile's jewel-hard surfaces resist stains and scratches. Colors can't fade. No repainting or replastering. Kraftile is kept clean by an occasional wiping with a damp cloth.

For advantages like these, the U. S. government has used thousands of tons of Kraftile Wall Units. Hundreds more of Kraftile Quarry Tile, Housing Blocks, Patio Tile and swimming pool accessories.

Right now the same advantages are being proven on scores of Western industrial jobs like those shown here. Perhaps Kraftile is the answer to *your* problem. It will pay you to investigate. Write the KRAFTILE COMPANY, Niles, California.

● *ARCHITECTS: Myron Hunt and H. C. Chambers*
CONTRACTORS: Campbell, Lowrie and Lautermilch

● *ARCHITECT: Frederick H. Reimers*
ENGINEER: Plant Engineering Division

(above) **Office Storage Vault at Friden Calculating Machine Comp**
8" Kraftile Housing blocks faced with 4" Kraftile Glazed Wall U
provide 12" fire-and-waterproof walls. Ceiling is pre-cast Kra
beams and 4" thick Kraftile slabs. Will carry 75 lbs. per sq. f

(left) **Wall Unit Partitions at Kraft Cheese Company Plant, Los Ang**
15,000 sq. ft. of Kraftile Ceramic Glazed Wall units make t
sanitary, maintenance-free partitions around production rooms
coolers. 2,274 sq. ft. of Master Kraftile 6x9's were used on stair
and in toilets. And for production room floors, these are 15
sq. ft. of Kraftile Quarry Tile

cut labor time

save on steel

slash upkeep costs

3 types of Kraftile Wall Units:

"Salt-Glazed" type is the most economical. Laid with a nominal ¼-inch joint. Available in buff shades. Ideal for jobs where decorative effects are unnecessary

Ceramic Glazed *(unsized)* gives both beauty and utility to industrial construction. Laid with nominal ¼-inch joint. They come in triple-glaze surfaces, a variety of colors — bright, mat, mottled or clay-coated

Ceramic Glazed *(precision-sized)* is the highest quality wall unit available. Edges ground at the factory to assure closest possible setting — laid with nominal ⅛-inch joint. Triple-glazed, they come in a full range of colors and finishes

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Firehouses — Galleys
Machine shops — Hospitals
Barracks — Hangars
Administration Buildings

KRAFTILE HOUSING BLOCKS

Exterior walls of mess halls
Fireproof kitchen partitions

KRAFTILE QUARRY TILE as flooring in

Kitchens — Washrooms
Coolers — Shower rooms

KRAFTILE PATIO TILE as flooring in

Mess halls — Recreation centers
Locker rooms — Storerooms

Kraftile Company is a member of the Producer's Council, Inc., the national organization of manufacturers of quality building materials

RICO LEBRUN

Art sensation of the month, along with the concurrent show of the paintings of the surrealist, Salvador Dali at the Legion of Honor, is the deYoung Museum's huge one-man show (through the current month) of drawings and paintings by Rico Lebrun, Santa Barbara artist, late of Naples, New York and Los Angeles, who not long ago was included among the little-known Americans at Manhattan's Museum of Modern Art.

This artist, who has steadily risen until he is now looked upon as one of the leaders in the American art scene, draws from sources as divergent as the Italian Renaissance painters up to the method of Picasso, integrating his knowledge of his predecessors into an art completely and uniquely his own. Probably the most understanding critic of Lebrun is Donald Bear, Director of the Santa Barbara Museum of Art, who writes at length on the artist in the current Pacific Art Review:

"In the work of this contemporary artist, we find the lineal and plastic means interchangeable. One expresses, abets, aids and supports the other. Though Lebrun draws with rigid discipline of concept accompanied by powerful and tremendous literary and social overtones, his draughtsmanship partakes of, and is dependent upon, the swiftly connected passages of painting. His painting impacts to the recognizable necessity and the uncompromising importance of the contour. These elements he plays and intermingles in his art as a composer, not as a virtuoso.

"Lebrun does not always work with the theme of tragedy, but has devoted much picture space during recent years to magnificent studies of clowns (see illustration), street musicians and to some monumental portraits in line and tone. Many of them are forthright in exposition and classic in repose. . . . Some of these portraits and some of his great clowns are close to the nobility and attitude of the great Chinese portrait artists. His line sings, turns, swells, rises and falls, breaks into garlands of accentuation and, withal, divulges character with startling nobility."

RICO LEBRUN—Seated Clown. Done in chalk and pen. Santa Barbara Museum of Art.

SCHOOL OF FINE ARTS SUMMER SESSION

Six weeks of summer session at the California School of Fine Arts, San Francisco, starts June 29 and continues to August 8.

This summer, in addition to major classes in drawing, oil and water-color painting (beginning and advanced), there will be classes in landscape painting, design, and advertising art with special emphasis on war and Red Cross posters; also a class concentrating on lithographic printing will be given as a method of reproducing posters.

In keeping with the general policy of the school to give aid in the war effort, the Department of Advertising Art is giving student assignments with subject matter almost entirely devoted to that end. Problems covering many phases of war activities are given, such as posters and booklet covers for the sale of war bonds and stamps, the campaign against spreading rumors, increased production in war industries, relief activities, such as the Red Cross, which is actually using one of the student posters for its new San Francisco Blood Bank.

Personnel of the summer session faculty will be as follows:

William A. Gaw: still life, oil, water color, figure and landscape painting; Paul Forster: advertising art; Marian Hartwell: design; Spencer Macky: elementary and life drawing, history of art and anatomy lectures; Ray Bertrand: lithography; Frank Smith: ceramics; Ruth Cravath Wakefield: children's class.

The fall semester will open with a full program of courses in the fine and applied arts on Monday, August 17, 1942. Fundamental courses in drawing, painting, sculpture, and design.

BUSY MONTH AT SAN FRANCISCO MUSEUM OF ART

June is a busy month at the San Francisco Museum of Art. Many and various are the exhibitions there; several large exhibitions—Contemporary Mexican Painting, Joan Miro and The Fire Blitz, London 1940 which is a collection of exciting illustrations of bombings painted by artists who witnessed the scenes of destruction—and numerous one-man shows by California artists.

A joint exhibition shows the watercolors of Karl Baumann and temperas of John Gutman. Lithographs will be exhibited by Ben Messick of Los Angeles, oil paintings by both Jean Gates Hall and

IN AN EVER CHANGING WORLD

Kenneth Rexroth. Alma Lavenson contributes photographs of the Mother Lode country. Both Carroll Barnes and Isamu Noguchi have sculpture exhibitions, and Carleton Lehman is displaying his Mural Designs for Fort Ord.

Two groups of Latin American Posters bring a new aspect of South American art. The American Monotype Society has a fine exhibit of prints—a media seldom used these days. The San Francisco Art Association Artist Members' Exhibition will be followed by a fine group of Modern Paintings from five local collections.

Illustrating the last named exhibition is the fine Van Gogh, "Portrait of Mlle. Ravoux," painted in 1890. This oil which has all the richness of color and exciting rendering of the finest Van Goghs is in an anonymous collection at the Museum. Other modern masters in the exhibition are Rouault, Dufy, Braque, Picasso, Modigliani, Klee, Chagall, Utrillo, Vlaminck, Gromaire, Hofer.

S. F. ART ASSOCIATION PRIZES

Prizes for the Water Color Annual of the San Francisco Art Association, are as follows: Art Association purchase prize, $50.00, to John French for "The Road"; the Association purchase prize, $25.00, to Gudrun Gref for "Standard Station"; Artist Fund prize, to Erle Loran for "Coast Town." Honorable mentions went to Karl Kasten for "Portrait" and to Mine Okubo for "Wine to Drink."

The jurors were: Selection, John Haley, Theodore Polos, Charles Lindstrom, Otis Oldfield and Leah Hamilton. Awards, John Haley, Theodore Polos and Otis Oldfield.

ALBERT BENDER GRANTS IN AID

Working in collaboration with the trustees of the Albert M. Bender Memorial Trust Fund, the San Francisco Art Association announces that two "Grants-in-Aid" will soon be given for the first time —one in Literature and one in the Field of Art. These "Grants" have been made available through the establishment of a special fund in memory of Albert Bender through the generosity of his many friends. Each award carries a stipend of $750.

Applicants must have been residents of Central California for at least two years. There are no restrictions as to age, creed or color. Application blanks and full printed information may be obtained from the San Francisco Art Association, 800 Chestnut Street, San Francisco.

All applications must be received not later than July 15th.

PAN AMERICAN POSTER CONTEST

To encourage the expression of artists of the free countries of the Americas the Museum of Modern Art announces a United Hemisphere Poster Competition.

The winning posters will form an exhibition which will be shown first at the Museum of Modern Art in New York and thereafter throughout the hemisphere. The winning designs will also be placed at the disposal of United States Government agencies.

An entry blank may be had by writing to the competition director. Submissions shall bear no identifying names or symbols. Posters may be received at the Museum in New York not later than 5:00 p.m. on Tuesday, July 28, 1942. Entries must be sent to Eliot F. Noyes, Director Department of Industrial Design, Museum of Modern Art, 11 West 53rd Street, New York, New York.

ART BRIEFS

The president and board of directors of the San Francisco Art Association announce the award of the Abraham Rosenberg Scholarship for the third time. This year it has been divided between Ray Bertrand, lithographer, and William L. Clarke, designer and craftsman.

The summer session of the California Shool of Fine Arts will be held from June 29 through August 8.

Dr. Grace L. McCann Morley, director of the San Francisco Museum of Art, left recently for Mexico, Guatemala and Honduras where she will continue her studies of Latin American art and artists.

An important gift to the Anne Bremer Memorial Library, California School of Fine Arts, is a copy of "My Playhouse Was a Concord Coach" by Mrs. Mae Helene Bacon Boggs. It is an Anthology of Newspaper Clippings and Documents Relating to "Those Who Made California History During the Years 1822-1888."

VANITY FAIR SHOW AT CALIFORNIA PALACE, LEGION OF HONOR

The unique Vanity Fair Show, at the California Palace of the Legion of Honor, until July 16, is inter-

VAN GOGH—Portrait of Mlle. Ravoux. Oil on canvas, 1890.

esting not only as an exhibition, but also because it marks the first attempt of a museum on the West Coast to produce a major exhibition in the face of obvious war-time difficulties. Despite these obstacles, Thomas Carr Howe, Jr., Director, has assembled an exhibition that ranks high in quality, originality and interest. There are more than 200 separate objects, ranging from large tapestries and paintings to perfume bottles and hair ornaments, loaned by museums, dealers and private collectors throughout the Nation.

The Vanity Fair Show is not a costume show, like the recent one at the Metropolitan Museum. Instead, it is a survey of styles in women's headdress and adornment through the ages, from early Egyptian through the 19th Century. The show is ambitious in scope, embracing painting, sculpture and decorative arts, including tapestries and pieces of fine craftsmanship.

AT THE GALLERIES

The museums contribute the following announcements of events to occur after publication date of the Architect and Engineer:

M. H. de Young Museum

COSTUME DRAWINGS BY ELIZABETH GINNO—through June.

PAINTINGS AND DRAWINGS BY RICO LEBRUN—through June.

SAN FRANCISCO ARCHITECTURE BEFORE THE FIRE—opening June 15.

CONTEMPORARY RUSSIAN ART — from the Christian Brinton Collection lent by the Philadelphia Museum of Art, through June 21.

CONTEMPORARY WORK OF THE PALEKH MASTERS, former Icon Painters, lent by the American-Russian Institute, and

19TH CENTURY PAINTINGS OF IMPERIAL RUSSIA —from the Museum's collection.

LECTURES

THE ART OF PALEKH FROM ICONOGRAPHY TO NOW, Saturday, June 20, at 3:00 p.m., Victor Arnautoff, Instructor at Stanford University.

REMBRANDT, THE BIBLE & THE ORIENT, Saturday, June 27, at 3:00 p.m., Dr. Stephen Kayser.

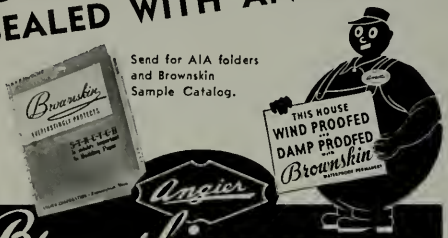
BASKETRY OF THE AMERICAN INDIAN - MATERIALS, TECHNIQUES AND DESIGNS, Sunday, June 28, at 2:00 p.m., Edward C. Counter, Jr.

SIX CENTURIES OF ARMS—gallery tour, Sunday, June 28, at 3:30 p.m., Edward C. Counter, Jr.

Miss Helen Gordon Barker lectures on the Museum's permanent collection each Sunday at 2:00 and 4:00 p.m.

Drawing of new Milwaukie, Oregon Housing Project—Roi L. Morin, Portland, Architect. Inset, model of typical home. Angier building paper used, to keep these houses warm, dry and tight.

OREGON HOUSING PROJECT IS AIR-SEALED WITH ANGIER PAPER



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AIR RAID PROTECTION HERE AND ABROAD

by FREDERICK JONES

In England protection against air raid concentrates in shelter against splinters, concussion and debris. Effort has been made to find interior spaces in well constructed buildings where masonry partitions afford lateral protection and floors above act as detonating surfaces and debris-collectors.

Basements are found not to be good because of the possibility of broken steam lines, electrical services and gas mains.

The London subways have been such havens of refuge that it is felt by many Americans that our subways will be satisfactory shelters. But in most instances, this is not true. The London subways are generally a hundred feet or more beneath the surface, this level having been necessary because of the nature of the soil strata under the city. The depth protects the subways from the ground movement resulting from bomb-explosion.

The accompanying illustration shows a man-high cartridge type of sentry-box now common in London as an air-warden's post. The warden stays out more or less in the open and takes it as it comes. The box protects him until there is a direct hit in his vicinity, after which he is under the skies.

Study of the air-raid protection problem has been going on for many months, and still is in fact. The data of the English air-blitz has been pondered and reviewed. English shelter methods have been worked over. Actual experimental shelters have been built and trial bombs dropped to test their efficiency.

An important part of American air-raid protection is the organizations that have been built up in various sections to deal with the overhead blitzes and their immediate results. Maps have been made of neighborhoods. These contain records, in instantly recognizable form, of facts essential in emergency—the location of persons with first-aid training, of invalids who must be moved, of gas-fired furnaces, shelters, telephones, fire hydrants. This is the result of the efforts of the very efficient Office of Civilian Defense.

The country is, therefore, energetically, and efficiently prepared for air defense. The Axis powers have it within their power to bomb American seaboard cities if they find it strategically advantageous. It would be an expensive operation for them, in money, tieing up of equipment, and losses of planes (particularly if the raids were on a suicide basis) and its dividend to the Axis would be mainly in panic value. If we experience no panic, have no lessening of morale, the raids will represent Axis defeat.

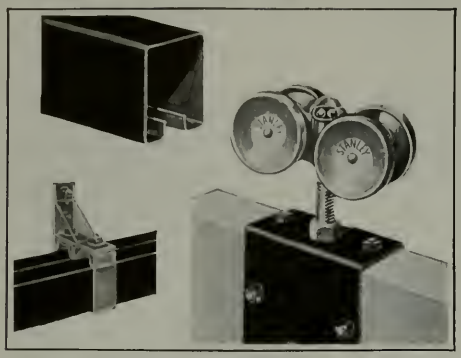
The prevention measures we have adopted, therefore, even should it eventuate that they are never called into play, are valuable strategic moves, which tend to defeat the purpose of air raids even before they are started. In the main, many of the most careful thinkers believe the best defense is aloft. A million dollars worth of airplanes is better, safer and vastly more effective than a million dollars worth of ground protection. And the air-protection can be at the same place as the air attack.

Man-High Cartridge Type Sentry Box.

NEUTRA ON STATE BOARD

Governor Culbert L. Olson has appointed Richard J. Neutra of Los Angeles a member of the State Board of Architectural Examiners to succeed Frederick H. Meyer, term expired. Mr. Neutra has an international reputation as one of California's foremost exponents of the modern trend in architecture. He is a graduate of the University of Vienna, is the winner of various architectural prizes here and abroad and has lectured at Harvard, Princeton, Columbia and other leading universities. He was a treasury department appointee on the national competition commission for United States post offices and a consultant of the United States Housing Authority.

STANLEY Track and Hangers



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Photo, Esther Born

CANTILEVERED COMPANIONWAY, WILCOX COTTAGE, GEARHART, OREGON

Roi L. Morin, Architect

TERRACE (SOUTH SIDE), A RESIDENCE IN WALLA WALLA, WASHINGTON
Completed March 1942. Asbestos shingle roof—tawny red, Gladding-McBean's fawn-colored face brick, lead-coated steel flashing and spouts.

HOW'S YOUR SECOND FLOOR PLAN?

by
Roi L. Morin, A.I.A.

This exhibitionist complex of architects is a most curious delusion. Executed work illustrated in professional periodicals is viewed mostly by the "trade" and, if ingenious and inventive, is "cribbed," if clumsy and awkward is "crabbed," or ignored, and few commissions can be traced to such publication. I often wonder at men who have their stuff published regularly—can they be obsessed with a messianic complex? To be sufficiently well-known to have my name pronounced correctly at Institute Conventions would be reward enough, yet this doesn't work with Cret, Lescaze or Saarinen! Life might be infinitely simpler with a monicker like Smith, Jones . . . or Stanford White. In any event—here I go again!

A curious racket, this business of architecture! On reviewing these plates before going to press, my mental comment was "What a hell of a way to make a living." The time, energy and cunning exercised during the past twenty years if directed in any other channel—even peddling life insurance—might have made me independent. "Then why do you do it?"—a woman would say. Because, madame, I like it and I wouldn't swap my daily routine for the most lucrative paper-passing job on Wall Street —provided I couldn't harbor mental reservations about going back to architecture! "Then what are you grumbling about?" Frankly, I'm not kicking—just thinking out loud.

* * * * *

Presented herein are reproductions of some

(Turn to page 22)

Photo, Erven Jourdan

TERRACE SIDE, TROLAND RESIDENCE, NEAR VANCOUVER, WASHINGTON.—1941

Stock, V.G. fir siding painted 3 coats lead and oil, white; millwork, V.G. fir—sash painted red; gutters, flashing and downspouts—16 oz., copper

STUDY MANTEL, TROLAND RESIDENCE

V.G. fir wainscot—stained; pine panel carved by Gabriel Lavarre; plaster walls covered with "Fabrikona"

MAIN BATH, TROLAND RESIDENCE

Crane fixtures with Criterion trim; L-O-F glass brick panel; rubber tile floor and base.

ENTRANCE FRONT, TROLAND RESIDENCE
V.G. 5/2 red cedar shingles laid 4½"-16", stained with heavy black graphite; paving and door trim, Mt. Adams stone

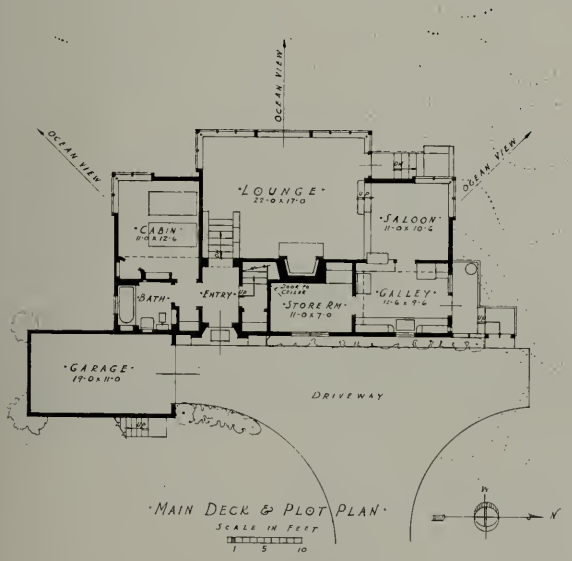
commissions executed by this office in the past decade—mostly residential. Modernists will hardly glance twice at these pages and traditionalists may be disappointed, but it is believed a few run-of-the-mill architects will like to look them over—it might make them feel better about their own work. An ever-increasing number of average Americans like to live in these homes, and are pleased when complimented by their friends—although they do not understand why the plaster cracks, the paintwork is not velvety smooth, and the windows sweat—particularly when they feel they have spent so much money—and these criticisms are felt more keenly than the adulations or deprecations of the profession.

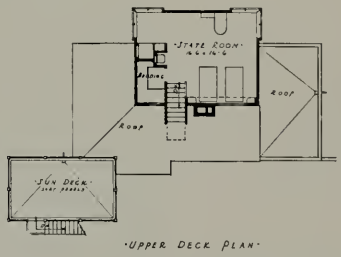
Representing the highlights of a decade of work, in a turbulent and fast-paced era, these designs do **not** record a steady and consistent growth based upon firm convictions, but rather a studious and painstaking groping to express the changing times, methods and approaches, resulting occasionally in downright confusion. It has been difficult to reconcile the desires of a patronage that regards an architect less as an artist than as a policeman—and feels its money well spent only when the most highly polished and smooth surfaces are achieved, with an international design movement that gives lip-service to beautiful wood surfaces and then uses the most common of structural woods to achieve same, and doesn't even bother to putty the nail holes. I was apprenticed in offices that considered anything less than seven coats of lead and oil with Ripolin finish (sanded between each coat), on Eastern White Birch, an inferior finish, and now find myself competing with a thin brush coat of oil on fir. An eastern periodical lately devoted considerable space to the work of a famous modernist wherein all materials and construction methods were described in the most involved technical terminology. Intrigued by a certain material used in these structures, by diligent research in Kidder's, Webster and the Thesaurus, I found it to be No. 3 common Douglas Fir shiplap! A man who kept his head during this period is either far stronger-willed than the writer, or has been cloistered.

These are not cheap houses, though a certain relative economy has been practiced perforce in all designs. Even though executed in one of the lowest-cost regions in the entire country, of more or less stock materials, and in

ENTRANCE FRONT, WILCOX COTTAGE

V.G. fir flush panel door painted Chinese red; Schlage special set-back locks and latches; Columbia's split brick-tiles painted white





PLANS, WILCOX COTTAGE

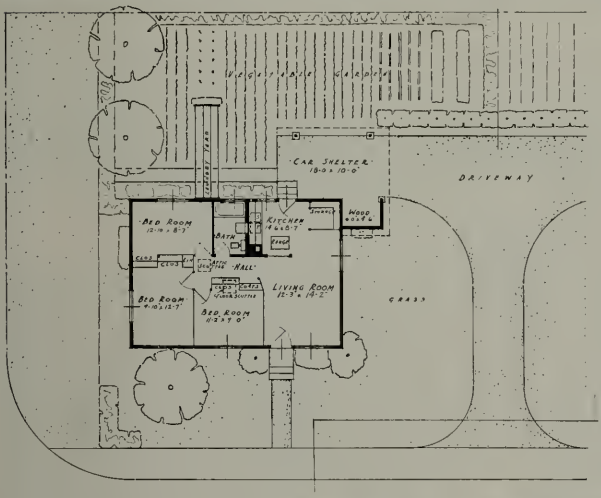
A cultured young bachelor's week-end beach house on bleak rolling sand dunes facing the Pacific

OCEAN SIDE, WILCOX COTTAGE

Sandblasted and gray-stained siding with appearance very similar to buildings tempered by sea fronting structures 10 years old;
85# white granulated surface rolled roofing;
16-oz. copper flashing and galvanized nails throughout

LOUNGE, WILCOX COTTAGE

V.G. fir wainscot—natural stain;
Fir-Tex walls and ceiling—with walls finished in "Fabrikona";
oak flooring stained black—oriental straw mat in recess;
Superior fireplace heats entire house by means of ducts



MILWAUKIE HOUSING PROJECT
(under construction)

Oregon's first attempt at slum clearance just outside Portland city limits. 100 units on 15 acres—hillside terrain; single story, all wood construction—cedar bevel siding, shingle roofs; 4.59 rooms per unit; 1x3 T. & G., end-matched hemlock floors; Briggs fixtures; Schlage hardware; Gasco Road-Binder street surfacing.

CLACKAMAS HOUSING PROJECT
(under construction), unit plan

Usha, Ore.-1-1R, 100 units just outside of Oregon City; unit cost about $1925—one of lowest in Region VII; about 40% single family units with subsistence gardens; all units include car shelter; 4.25 room count.

CLACKAMAS HOUSING PROJECT—photo of model.

100% V.G. 16" 5/2 cedar shingle siding and roof; V.G. fir trim—sliding sash—painted high colors; siding stain grey.

Photo, Erven Jourdan

A RESIDENCE IN EASTMORELAND—1940

Columbia's split-tile brick base; natural white finish stucco; Pella windows; 5/2 red cedar shingle roof, 4½" exposure, stained brown; V.G. fir millwork painted 3 coats lead and oil

A RESIDENCE IN EASTMORELAND—ENTRANCE

16-oz. copper built-in gutters, downspouts, decks and flashing; wrought iron door grille by Parish

A RESIDENCE ON HEALY HEIGHTS—1941 Photo, Erven Jourdan

Stock fir siding painted white; peacock blue sash, black shingle roof; magnificent view, 1000 feet above city of Portland.

A RESIDENCE IN ROSE CITY—1941 Photo, Erven Jourdan

Difficult problem of orienting 7-room, 2-bath house on 50-foot lot on bank with south front. Stock fir siding painted white—shingle roof—black; Kohler fixtures; oak flooring; cost $9350, exclusive of lot and landscaping.

SCHLESSER RESIDENCE—1940—ENTRANCE FRONT

Photo, Erven Jourdan

White cement stucco base; stock fir V-joint siding, fawn colored; cedar shingle roof stained red-brown

SCHLESSER RESIDENCE TERRACE SIDE

G. I. leaders and spouts; W. I. rail by Parish; 9 rooms, 3 baths, 2-car garage; cost, $13,500

COE RESIDENCE ALTERATION—1939—DINING ROOM
An extraordinary commission wherein the owners had complete furnishings of rare and valuable Georgian antiques
V.G. fir wainscot and trim painted Williamsburg lead-blue; maple floors stained black; plaster walls oyster white.

Photo, Minor White

Stair Hall

Morning Room

COE RESIDENCE ALTERATION, LIVING ROOM

Antique marble mantel from Edinborough; fluorescent tube lighting in cove

COE RESIDENCE ALTERATION— MAIN BEDROOM

Furnishings, family heirlooms from Charleston, S. C.

PIERRE SMITH RESIDENCE, WAVERLEY—1940—ENTRANCE SIDE

Photo, Erven Jourdan

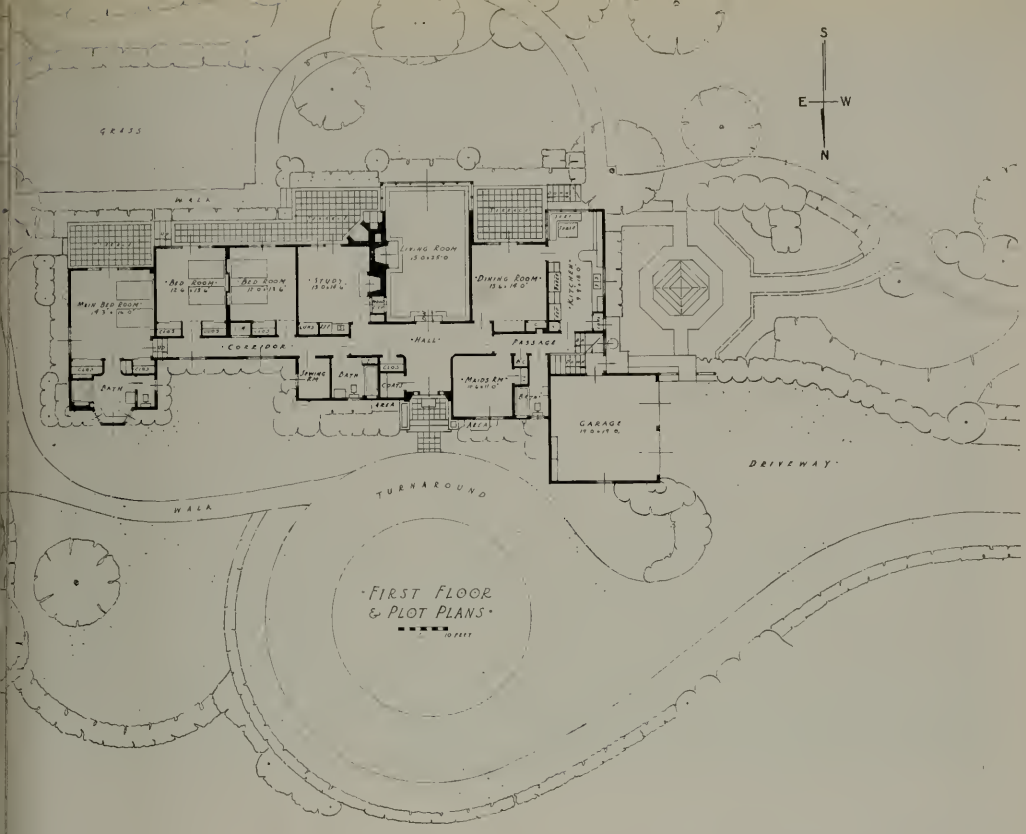
Stock V-joint fir siding—painted white; millwork V.G. fir casement sash and shutters—painted canary yellow; shingle roof golden brown; Schlage hardware; Whitco operators; Rolscreens; G-E oil-fired furnace.

PIERRE SMITH RESIDENCE—TERRACE SIDE

Columbia split-tile brick and terrace tile

PIERRE SMITH RESIDENCE—MAIN BEDROOM
Full carpeted floor; papered walls by Nillson; fluorescent tube lighting over beds

PIERRE SMITH RESIDENCE—KITCHEN
Standard Sanitary fixtures; linoleum countertops, floor and base;
tan leather upholstery in nook; 5-coat lead and oil finished with Ripolin enomel



PIERRE SMITH RESIDENCE—PLAN

Rocky and wooded acreage. House oriented with sun in disregard of lot or street lines. Family—husband, wife, 2 young children and maid

STUDY BAR

V.G. fir wainscot and trim—stained; "Fabrikona" walls over plaster; Flexglass recess wall; colors — olive-tan and brown

CONGRESS COFFEE SHOP, PORTLAND, OREGON—1940

Photo, Minor White

Armstrong linoleum floor; bleached oak wainscot; plaster walls painted pale green; fluorescent lighting

CONGRESS COFFEE SHOP—GALLEY DOORS

Dupont Fabrikoid padding and upholstery; Rixson hardware.

A. F. SMITH ALTERATION

BEVERLY HILLS—

MAIN BEDROOM

U. S. Gypsum's putty coat plaster—canvased with Pequot sheeting; millwork and trim clear white birch with carved details—painted 5 coats lead and oil; panels brocaded silk; Higgins rolling screens

MAIN BEDROOM

Standard Sanitary fixtures in color; Gladding-McBean tile—birch trim carved and gilded; ceiling finished in gold leaf; lighting fixtures by B. B. Bell & Co.

A RESIDENCE IN BROADMOOR, SEATTLE, WN.—1931—GENERAL VIEW

Common brick walls, Cabot's Double White; Graduated shingle roof—graded from dark to light blue; sash and shutters blue Collopake; cast stone trim

A. F. SMITH ALTERATION—DRESSING ROOM

A. F. SMITH ALTERATION—BREAKFAST ROOM

accordance with standard practices, I confess an inability to produce work as economically as so many modernists record they are able to do at will—using no standardized methods whatsoever, and building anywhere in the U. S. Except for the USHA structures all these homes cost 30 cents per cubic foot or better.

I admire, no end, the ingenuity and inventiveness of Frank Lloyd Wright; the skilled planning of Neutra; the simplicity of Gropius and Raymond; but, whenever I attempt to emulate some of their practices in my own work I have learned they cost **me** a great deal more—besides inviting faulty construction. I shy from hoodless windows to keep them from leaking, still use picture moulds, baseboards and opening trim to conceal plaster cracks and avoid extensive window areas—to keep the outside **out**—where, in most of my clients' opinions, it belongs. I know from bitter experience that flat roofs are not only difficult to keep watertight and cost relatively much more to build, but, they also cause sweating ceilings in hot weather.

CASEY RESIDENCE, PORTLAND, OREGON—1940
A split-level plan on steep hillside on highest point overlooking city.

ROI L. MORIN

Some long-faced people have advised me that the great have similar troubles, but since I have never seen one of these modern homes five years after completion I am in no position to judge.

I confess besides, to certain low, hedonist tastes. I feel that I could live with greater comfort in any one of a score of Harrie Lindeberg's houses than in Corbusier's famous villa at Passy, and I know that I could carry on with less inconvenience in a $10.00 room at the Waldorf-Astoria than in any house that was ever built by either modernist or fundamentalist. I read with amazement that the low sweeping simplicity of modernism is a bedfellow of the music of Bach, Brahms and Beethoven—my humble architecture must therefore be the reason why I prefer an evening with the colored chorus of "Cabin in the Sky" to the Philadelphia symphony.

I am deeply stirred by the versatility of modernists in not only designing on paper, but also

NEU RESIDENCE, PORTLAND, OREGON—1930
TERRACE SIDE

NEU RESIDENCE—ENTRANCE

SHEA RESIDENCE, KINGS HEIGHTS—1939—LIVING ROOM
V.G. fir trim and sand finish plaster painted pale blue.
Clear pine panel curved around mantel—carved by Gabriel Lavarre—stained; fluorescent tube lighting in cove—arched ceiling; glass brick panel by L-O-F; Montana pink marble by Lutz

Photo, Roger Sturtevant

SHEA RESIDENCE—KITCHEN
Colors—red and battleship gray; Standard fixtures, Armstrong linoleum

SHEA RESIDENCE—MAIN BEDROOM

Color—magnolia pink; Lonegren Swedish wallpaper by Nillson; Cheney silks; Rolscreens.

becoming privy to the skill of all the building trades. They build as well as draw! Being only a paper architect myself I stand in awe of such superhuman achievements. Admonished at an early age by the French proverb "Chacun a son metier" I try to confine all trades, on my work, to their own chores and will raise hell with the carpenter foreman if I find an electrician or a plumber doing his own wood blocking. I have been shaving myself at least 5 times per week for the past 25 years and am yet unable to guarantee that I won't cut myself during the process. If my car breaks down or even runs out of gas I walk away from it and phone a mechanic. Although I have spent most of my mature life chained to a drawing board, I confess an inferiority complex in contemplation of the skill of men like Goodhue, Lloyd Morgan, Cass Gilbert and a host of others.

A client once said to me that "architects were the only people who had the impudence to build monuments to themselves at someone else's expense." Believing, as I do, even in these troubled times, that Saint Peter's is historically more valuable to the human race than the lives of 100,000 natives, chosen at random, of the present-day Italian peninsula, I accept the admonition. I consider the basilica of St. Paul's more valuable than the life of Adolph Hitler, all modernists to the contrary notwithstanding!

The modern style is the present way of saying what we architects have always said—we are the true historians of the times in which we live.

So be it!

THE ERA OF TOTAL WAR

by J. S. KNOWLSON

Last week, while trying to decide what I could say to you which might contribute to your knowledge of war production, I found myself thinking that it was a long time since I had met with a group of my own people in my own home town. It seemed to me I had been in Washington for years instead of a short nine months. As I wondered why these months seemed like years, I realized it was because in this short time you and I have lived through two eras, and now, in my opinion, we stand on the threshold of a third era.

The eras we have passed through are, I believe, the Defense Era and the Era of Awakening. The era upon which we stand is the Era of Total War.

When I left Chicago and went to Washington last September, we were in the Defense Era. By then the President and the little handful of men, who had seen from the beginning the implication of the Hitler threat, had succeeded in rallying an increasing number of people to the belief that America should arm. What we then considered a magnificent program was under way.

The people throughout the country were showing increasing concern as the clouds of war rolled even nearer but, by and large, it was an academic concern about war itself rather than an awareness that we ourselves might actually become engulfed, personally and as a people, in this terrible struggle. Most of those who supported the defense program did so in the belief that a country as large and mighty as ours should not permit itself to get too far behind lesser nations in the matter of being prepared for a military showdown. And the defense effort was supported by those who thought we might as well give munitions, but not men, to England in her gallant fight against the totalitarian powers we detested.

The act to extend the draft period had passed by a single vote. Many manufacturers who, a year before, had been too busy even to consider bidding on defense contracts were beginning to think they should have some part in the defense effort—provided it did not interfere too much with their regular businesses. There was an increasing willingness on the part of us all to do what we could, as long as we did not have to stop our regular production.

Those who were particularly concerned with defense production were beginning to see there were going to be serious shortages of some materials. Aluminum had become a problem. There were some who believed that copper was scarce, but others hotly denied that this was true. As the clamping on of priorities began to upset business-as-usual for those who wanted aluminum for trimmings and gadgets, we passed through a period of protest.

The defense program, it was charged, "was ruining our industries and placing our economy in jeopardy." Manufacturers scurried around, substituting rubber trays for aluminum trays in their refrigerators, substituting plastics in radios for zinc and aluminum die castings; stainless steel replaced still other aluminum parts. We all felt pretty virtuous and business kept on booming.

To be sure, the war clouds got blacker in Europe and the Near East; and in the Orient the Jap—that funny little fellow with buck teeth and a marvelous ability to copy his betters—began to throw his weight around. We

An address by the Director of Industry Operations, War Production Board, before the National Association of Manufacturers and the Illinois Manufacturers' Association, at the Hotel Stevens, Chicago, May 26.

watched a world in flames, and our attitude seemed to be that we would settle all that when we got around to it. The Jap? Oh, well, we might have to spank him if he got too gay—that is, if we could find him. Maybe, we thought, we'd better send a bit more of our munitions over to England, help her hold off the German paperhanger. But for heaven's sake! Let's not get panicky about copper. Let's not stop business.

"Sure," we said, "we all want to make our contributions to defense, and we want to make a million radios so our people can hear the news!"

We were—a pretty smug people.

You and I lived through that era—the Defense Era—and then came Pearl Harbor, and the era was gone. Overnight we were plunged into the highly emotional atmosphere of the Era of Awakening, and with it came a new tempo, a new spirit.

My phone still rang, but the same voice which a week before had insisted that the bronze grave-marker industry should not be jeopardized by a silly notion that copper was scarce, now wanted to know why the devil we were giving copper to power lines when it might go into shells. Another voice wanted to know why we didn't have an air raid shelter in Hollywood.

The country woke up with a bang to the fact that the Jap was not just a funny little fellow with buck teeth, but a keen, brave, resourceful fighting man who was out looking for US! Hitler wasn't just a paper-hanger on a spree, but the fellow who was sinking our ships in sight of Coney Island and Palm Beach, in the St. Lawrence River and at the mouth of the Mississippi. All of a sudden we knew this wasn't just England's war, but OUR war.

Congress poured out money in appropriations. The President's Production Program startled the world, including us. Rubber and tin disappeared, and the scarcity of copper was no longer a matter of opinion. It was cold, painful reality.

We who were in position to see what materials were required, what facilities were needed to produce the goods of war, faced the necessity of saying to all of you: "There is no chance of placing the war production program on top of the civilian economy. You must stop—and stop now—producing your normal products. Whether you like it or not, you must get into war production." As the days went by, this became obvious to us all.

Day after day the orders have poured out—curtailing this, stopping that. No more copper except for the things we need most urgently. No more steel for some 400 types of consumers' goods. And always the prod at our heels has been: "Hurry, hurry! The enemy is pushing us around. We want guns and ships and planes, and more guns and ships and planes."

In these brief but crowded weeks we have been rushing down a road which we Americans have never traveled before—the road to total war. We have to travel in days and weeks distances the enemy covered in months and years.

Business — manufacturing — competition as you and I know it, is gone. We turned our backs on it after Pearl Harbor. We turned our backs and we have been marching forward, but with many a backward glance, hoping that our war effort could somehow, someway, be carried on without giving up the ways of peace and normal business. We were a little stubborn and a little slow, but that notion has been knocked out of our heads, and we stand now, I think, at the end of the Era of Awakening. Before us lies a new era—the Era of Total War.

I don't think that one of us today really knows the deep and awful significance of that term—Total War. Certainly I don't. But before we get through we're going to have a new appreciation of Sherman's words. War is hell—one hell for the heroes at the front, the blazing, brutal hell of the clash of men and terrible machines. Another hell—the hell of worry and anxiety, the hell of frustration, an unsung, nerve-racking hell—is in store for us at home. That is total war.

Many persons—many manufacturers, large and small—don't yet realize this. Some voices over my phone these days are petulant. Here is a man whose business is being closed down and who can't get war orders. Here's another who can't get materials to keep his war work

on schedule. Another who has both orders and materials complains that war rules and regulations make operations impossibly difficult: "A bunch of stupid bureaucrats is ruining the whole war effort."

These people are feeling the grip of total war. Things aren't the way they used to be. The pattern is all different. The old way won't work. You've got to figure out new ways. You're asked to do the impossible. You can't do it. But you figure out a way. You do it. It isn't good enough. You've got to get along with less and make more. You can't do it? You've got to do it. This is total war. It's hell.

What are we going to do about it, you and I, as the days of high emotions pass, as we settle down to the dirty grind? For in the days ahead, no one is going to be interested in our EFFORT, but only in our production. Each day there comes across my desk a sheet marked "secret." On it are shown the number of planes and tanks and guns and ships delivered. Figures which make my heart swell with pride in you.

The details are secret; the dollar figures don't mean much. A billion dollars is just a figure to me. But a fellow came in last week and said a billion dollars is two Panama canals. Perhaps that means something. It's impressive to think we turned out six or seven Panama Canals last month.

It's impressive in itself, but it's more impressive when you see the figures as part of the trend. As the figures take their places day after day, they begin to show that typical parabolic characteristic we know so well. We are beginning to see the knee of the curve taking shape. We are beginning to see the country getting down to its job in that cool business-like way that makes our manufacturing plants and the manufacturing brains of the country our pride and the dismay of our enemies.

Your job—our job—is the same old job—getting the friction out. So far as the War Production Board itself is concerned, I think we are making progress. It is an organization thrown together under great stress — never able to run at halfspeed while the bearings ran in, always going beyond its capacity, always trying to catch up with the hurricane of events.

As the days go by, it is shaking down. Our people are beginning to find themselves, doing their jobs just a little better each day. We're trying new ways to do our job better. You see us setting up Regional Offices, charging them with specific responsibilities, trying to tie the day-to-day liaison closer to you, closer to the Armed Services.

You see the new buying techniques of the Services—none of them perfect, far from it; but they're efforts—stumbling efforts, maybe, but in the right direction.

Of course, there are going to be material shortages. Of course there are going to be orders which are not plain, which cross and recross. I like to dream that some day we will write an order to end all orders.

Of course, it won't be done, but if it were done, it might go something like this:

"WHEREAS, it is evident that the Axis Powers, hereinafter referred to in this order as the Customers, are the important recipients of military materials produced in the United States, and

"WHEREAS, in order to maintain and increase Direct Deliveries to the Customers, the People of the United States have pledged that their principal activity shall be production and Delivery of such military materials until the termination of sales resistance by said Customers, and

"WHEREAS, in order to insure prompt delivery to Customers, the government of the United States has arranged for assistance in making direct deliveries from the governments of England, Russia, China, Australia and the other United Nations, and

"WHEREAS, it is understood that, for the purpose of this order Direct Delivery shall mean 'any transaction whereby bombs, bullets, torpedos, mines, shells or other material of an explosive or otherwise peculiarly dangerous character are delivered on, in or near said Customers,'

"NOW THEREFORE, it is hereby ordered that each producer of such materials in the United States is exempted from all orders heretofore or hereinafter issued by the WPB and is granted a new Sooper-Dooper Preference

Rating which provides that

(1) Each producer devote all his facilities to the most efficient and rapid production of materials for Direct Delivery to the Customers, and

(2) Each producer transfer all material and equipment he cannot so utilize to producers who can so utilize, and

(3) Each producer cooperate in every possible way with other producers who are processing or servicing material for Direct Delivery, and

(4) No producer shall take any action or refuse to take any action when such action or inaction will in any way delay Direct Delivery of any material which is necessary for the destruction on schedule of the Customer."

Now, gentlemen, that's the kind of an order I'd like to sign, effective immediately. That would do it, because it would insure that every one of us was doing everything he could to insure delivery of bombs and shells to Tokyo, Berlin and Rome—to Axis ships, planes, tanks and men, wherever they may be.

Until that order is written, keep this in mind: All the orders are made with just one end in mind—to speed war production and to channel into that production at the most urgent places, every ounce of available materials. If you think those orders fail and don't help accomplish that end, ask for an interpretation. If you have doubts and feel you must act, do it. Tell us what you have done, and ask our approval. **But don't stop war production.**

You hear and see a lot about enforcement these days. You have met or will meet the WPB's enforcement men. These men are officers of production law and order. They are as much your friends as the policeman on the beat. Only a crook hates and fears a police officer and contemptuously calls him a "copper" or "flatfoot."

Some of our enforcement men may not be all that you and I might ask in judgment and diplomacy, but rest assured that no man has yet been held in violation of an order, without a hearing. No man yet has been punished for accidental or technical violation of an order. If at any time you think you have been misjudged, carry your case to the highest court, **but don't stop production.**

Further than that, use every effort to bring into production every tool and facility you can. In Washington we talk about subcontracting. In the local offices they work on it with considerable success. All of us know there are vast, untapped resources of facilities.

This problem is going to be licked—not by any broad gestures or talk—but piece by piece by you who have war work. I'm going to ask each of you this favor:

Won't you—each of you here who has war work—make it a personal project to find at least five more subcontractors?

It has been my privilege in bygone days to call many of you to leave your desks to work for charity and I know how you have responded. And just so, I call you now—not only for the sake of the little fellow who is facing ruin, but for the sake of your country, which needs every possible man-hour. If you can't give a potential subcontractor war work, give him some of the work on spare parts for your peacetime product, and make more of your own facilities available for the more complicated tasks of war production.

It is a proud moment for all of us when we can say: There isn't an idle tool in our plant. But it will be a much prouder moment when each of us will be able to say: I don't know of an idle tool in the community.

This problem of spreading war work, of developing subcontracting, is a local problem, a local production task.

There are two ways to end a war. The way France ended it, and it leads to slavery and degradation. The way we propose to end it, by turning every ounce of effort, every thought, every facility to this end. Total war. Going through hell. But going through—pray God—not staying there.

If by doing as we are doing now we can shorten this hell by a year or a month or a day, we shall not have lived in vain.

HOUSING AND THE WAR PROGRAM

A radio talk by WELLS I. BENNETT

At this particular time housing is a critical factor in the war effort. It has to be considered an essential commodity which must be made available in relation to one's earnings and place of employment.

Modern movements of population have tended to move toward cities and toward particular industries as such industries come to the front in our national picture. This general urban trend, changing with the rise and decline of this industry and that, has left houses empty in rural districts and has brought a deep depression to those cities whose families have moved away to better employment elsewhere. The whole movement is had at both ends as regards housing. The booming town finds its housing accommodations totally inadequate, and congestion results. The decaying town, ofter bankrupt, is no longer able to maintain its standards as to public and individual neighborhood upkeep. Slum conditions are likely to arise in both cases.

The New Deal housing program, including such agencies as the Federal Housing Administration and the United States Housing Administration is a response to this problem. It recognizes a public obligation. This is our present housing background. War times accelerate the movements of population just mentioned and magnify the housing problem. In the first World War, accelerated industrial production brought corresponding concentrations of workers. The Government at that time backed construction of houses through the Shipping Board, the Ordnance Department, and the U. S. Housing Corporation. Industrial towns such as Bridgeport, Connecticut, had outstanding developments. This war housing provided 16,000 family units of permanent construction. Now with a still greater war, existing industrial cities and plants are being expanded, in some cases doubled or tripled; additional labor is flowing into defense areas; and housing for these new families is already at a premium. Besides such expansions, many great wholly new industrial plants have been created out of whole cloth, so to speak. A great ordnance plant such as that at Charleston, Indiana, which will employ tens of thousands of workers, may rise in rough open country, scarcely marked by a single farm-house. Or in Michigan, a great bomber plant such as that at Willow Run, near Ypsilanti, may be created on open farm land normally supporting a meager agricultural population. A year from today the Willow Run bomber plant will be employing over one hundred thousand workers! In the production of bombers or the other prime necessities of war, labor is even more indispensable than are the metals of which bombers are made. The sole object of one of these great factories is production. To obtain production, the workers and their families must have decent and comfortable housing in which to live. Today in the Willow Run area that housing simply does not exist. The total number of dwellings built by the Government in the last war would be but a drop in the bucket. The problem of providing this necessary shelter is critical for in this area housing is absolutely essential to the national defense.

Let us consider the magnitude of the housing problem involved in this one plant at Willow Run. The more than 100,000 workers will mean with families of 250,000 people or more. This, aside from those who will furnish the necessities of life: food, clothing, garaging, and recreation to the workers' families. This means a city larger than Grand Rapids. Of course, the problem is not as direct as that. Many workers will commute from areas within a radius of twenty miles or even further. Expansions are already occurring in these communities which might be regarded as satellites of the bomber plant. Even so, terrific problems arise as to housing requirements for a plant already beginning to get into production.

Upon a moment's thought it will be conceded that in the interests of efficiency the war-defense workers must have housing convenient to work. This phrase "convenient to work" is packed with a headache for the planner. It has been argued that the American worker is accustomed to range over that area with little concern as to the number of miles between his home and his place of employment. This may have been true some time back, but it is not reasonable today. Our roads and railroads are already jammed with war transportation. More roads are being built, but it seems likely that they also will be too busy. Finally, as a last straw in the transportation problem, and new in this particular war, there is the shortage of rubber. Unless a supply of rubber can be found or manufactured, or some better means of mass transportation is immediately made available, the phrase "convenient to work as between home and factory" now means a much shorter distance than in the happier days of plentiful cars, rubber, and gas.

Time is painfully important in all our war plans because production of munitions is required at once. In considering housing, therefore, we are as short of time as we are of rubber in transportation. Neither expanded towns nor wholly new housing communities can be comfortable or safe as regards public health without modern water and sewer systems. The construction of these public utilities takes time. The construction of houses themselves, whether single dwellings or apartments, likewise requires time.

There is a fear on the part of some that communities of houses built to serve war industries will become ghost towns after the war. With certain specialized industries, such as the making of explosives, this would seem a rational conclusion, but with permanent plants readily convertible to peace-time use there is a good chance for the future, and we must take that chance. Good factories with good housing about them should have a preferred standing after the war; the better these are planned at present the better will be their chance of survival. In any event, our immediate situation requires the housing, and we must realize that all our cities, old or new, will be ghost towns if we lose the war.

With this pressing need for adding to our supply of housing, what are the prospects? These are essentially two, expanding existing towns, or building new communities. Ideally, we should build new communities, near enough to the great munitions plants to be readily reached by bicycle or with busses if they are available. Probably the site should be at least three miles from the plant to insure safety from bombing or sabotage. Since plants such as Willow Run are already located, ideal sites may or may not be available and the possibilities have to be explored. We would first have to determine whether adequate water can be obtained and whether sewage and storm water can be disposed of. It is worse than useless to plan a new town unless these public utilities can be provided.

Direct road systems leading to the plant should be constructed if they do not exist. The necessity of extra roads is imperative since present roads are likely to be inadequate in any case. It would be assumed that schools, churches, retail centers, theaters, and community buildings would be included in the definition of housing. Like streets and sidewalks, these things are part of housing and community planning. Parks and playgrounds are also an important consideration in site planning. Recreation is essential to the workers as to physical health and morale. If hours are long, parks and games must be more readily available. These facilities are, of course, likewise necessary for the families of the workers, especially the children. The financing and development of new communities would have to be carried through by the Federal Government.

In such a community you may be wondering about the houses themselves. We would have to assume that these would be of somewhat varying unit sizes to accommodate different families, with a majority of two bedroom dwellings. Both rental and purchase should be permitted. A majority of the occupants of the new communities would prefer single houses, though they will not be anxious for large lots. Others would readily agree to semi-detached

or twin houses, providing rents are lower. Many would prefer apartments for economy and because of freedom from housekeeping cares. A variety of groups should, therefore, be included. All dwelling units should be planned to make housekeeping easy and to provide air and sunlight to each room. Accessories and equipment would be simple.

In most extension projects, subdivisions are too often found to have been platted on the basic principle of getting the greatest number of lots per acre, and with no concern for the best use of the land or organized community life. The lots once platted, however, can be converted to better patterns of community standards only with great legal difficulties. Such developments, therefore, are of a compromise nature. If single houses are required, they may give quick answer, but they do not promise so well for post-war days if they are new dwellings in an out-of-date pattern.

Temporary housing and barracks for single workers have been proposed. They may be necessary as supplementary housing in our present emergency. They are not housing as such, however, and I shall give no time to them. Housing for defense should in general be permanent planned housing.

In conclusion war housing may be obtained in several ways as follows:

1. Improved roads and common carriers, such as busses, to enable people to commute to work from their present homes.

2. New communities within three to five miles from the plant. In this area these might range from 1000 to 10,000 units in size.

3. The expansion of present towns nearest such plants with planned layouts which will make these additions to existing towns real improvements toward better housing.

4. Temporary dwellings and barracks or dormitories, to be used for quick emergency use, so built that they will be short-lived only.

Many people, whether or not directly concerned with the housing problem, have taken a stand for one or the other of these plans for defense housing. In many cases, however, I should like to emphasize that all the housing that can be built by all the means that can be used will still not be enough. If private groups build all they can, if government builds all it can, the bomber and ship plant workers in April 1943 will still be short of housing. Whatever your preference, promote it with all your might, but don't oppose other means. They will all be needed. We owe bombers, tanks, and guns to our armed forces on the front line. We likewise owe housing to the workers on the second line.

4-INCH BUILDING UNIT ON PREFABRICATION PROJECT

The following article tells how a four-inch building unit has been successfully used on a prefabrication project in Canada:

A committee of the American Standards Association is working out a plan for standardizing coordination of building materials. This work is of importance not only in keeping down regular building costs but in the war emergency housing planned for defense workers, etc.

Following the success of this Quebec project, other buildings for the Canadian Government are now going forward on the basis of the four-inch design. This unit is the increment decided upon by the committees of ASA Project A62 as a basis for their work of coordinating building dimensions with sizes of building materials.*

When a two-story building was needed by the Canadian Government to house a staff of some 140 inspectors attached to war industries at Sorel, Quebec, the National Housing Administration of Canada turned to prefabrication as an answer to the demand for speed. To help further in simplifying the procedure, the plan of the building was based on multiples of four inches as provided in the A62 report. This demonstration of the work of Committee A62 was encouraged through the interest of the

* The work of the committee is described in detail and examples of co-ordination are given in a report of the project now available without charge from the American Standards Association.

Director of the National Housing Administration, F. W. Nicolls, who, as a representative of the Canadian Engineering Standards Association on the A62 Committee, was familiar with the work of the committee. Although the method had been applied to many small houses and buildings, the Sorel staff house was the first large building for which it had been used. When the decision to use the four-inch increment was made, the original building design and layout, prepared on the basis of ordinary production by the Canadian National Housing Administration, was made to conform to the four-inch method with very slight and minor changes.

The fabrication by means of the new method showed substantial savings in time and labor. For example, with this method, the simple four-inch jigging made it possible to cut wood-frames to length with speed and precision and the layout of the building provided the coordination of building dimensions with these lengths of frame members. As an overall job of substantial size, it is claimed to have set a new time record for shop performance, as well as for erection.

The building itself has two stories, is E-shaped, 140 feet 8 inches long by 84 feet 8 inches wide, 280,000 cubic feet in all, and has a full basement. All wall units, inner and outer, ranging from 8 to 16 feet in length as required, were delivered to the job with both faces complete, and with door and window openings let in. Thus all inner walls, when in position, were ready for painting. The wood frame was completely precut.

Walls and ceilings were assembled in sections in a temporary shop. The erection of the building at the site was accomplished in seven working days, including installation of all windows and entrances, interior doors on first floor, and oakum calking around all openings. The wall sections were erected at the rate of one every five minutes. The total man-hours for walls, ceilings, and roof amounted to 2,570; while the total man-hours for field labor amounted to 6,670.

It was reported that the precision of the various sections was such that no after adjustments of any kind were necessary. Just to be safe, the builders insisted on a tolerance of 1/16 inch on the lengths of all sections. This resulted in accumulating 5/8 inch along the run of straight wall 140 feet-8 inches long in which 12 joints between sections occurred.

It was noticeable, those in charge report, that all conventional operations, such as wood flooring and roofing, seriously hampered the progress of the work.

As a guide in carrying out the prefabricating technique, all schedules, plans, specifications, materials, and minute details of layout were carefully compiled in a shop book. So carefully were shop and delivery schedules planned that by the time the building was under roof, with exterior and interior walls in place, the plumbing and heating risers and attachments were in position, hardwood floors laid and stairs, windows, doors, and electrical wiring installed. The foundation called for 385 cubic yards of concrete and this was poured in one day.

The saving in time due to the coordination of the building details and dimensions was found to be a help by many of the subcontractors as well as the general contractor. "It was indeed very interesting to note the speed with which the house was erected," declared the contractor in charge of the electrical work in a letter after the work was completed. "For a building this type it usually requires three times more time and four times more men to build. It was at least a four-month job, but in two days the building was ready for occupancy; and instead of twelve men at work, three men were enough. . . ." The plumbing contractor remarked, "The plumbing and heating system can be installed in a record time and at a cost lower than ordinary construction."

On the basis of his experience with this large building at Sorel, the contractor has built a permanent shop for prefabrication, using the methods of 4-inch jig cutting and assembly which are made possible by the 4-inch increment and coordinated assembly details. By competitive bidding on various government war emergency projects he has been able to take profitable business sufficient to keep his new plant going to full capacity.

NEW HOUSING ERA OF MOBILE DWELLINGS

Placing housing at the top of our post war problems, Walter Dorwin Teague, eminent industrial designer, lecturer and writer, recently addressed the Detroit Chapter, A. I. A. Present housing, he said, is built for an age that is past, yet millions of families continue to live in it. The problem is now being looked at from the standpoint of reasonable planning and rational sensibility, he said.

"Dwellings of the future will come off the assembly lines, and it will be possible to trade in, add to or take away as required. It will even be possible to take your house with you if you move. This will all have an effect on our people and their way of living."

Regarding the immediate future after the war, Mr. Teague believes that aviation will come into its own in a big way. The vast expanse of facilities, such as landing fields, he believes, will bear this out. The great number of trained pilots, nearly one million, will be devoted to civilian use. Both passengers and freight will be carried to a much greater extent and an important influence on our lives will result.

On colonial architecture Mr. Teague commented that it was a good expression of that era, but he does not believe any more should be built. The difference in conditions between that period and the present do not justify it, he said. For instance, he cited the facts that in those days heating was done by fireplaces, there was no plumbing, cooking was done in an open fireplace.

"It is possible to take such a shell and torture it into modern needs," he continued, "however, if we take advantage of the technological advance we should be able to approach the problem much better without such restrictions."

Regarding Government participation he said that we are faced with more of this than ever before. However, he stressed the point that all of the great improvements of the past have come from brilliant individuals, and not from Government bureaus. He believes the Government should step in where private industry fails to solve a problem, as in slum clearance. Mr. Teague does not believe in group action in the creative field. He says that one should think for himself and act for himself and that free enterprise should be preserved.

Concerning wood as a building material the speaker said that it is the only continually renewing material. Coal, iron and all of the others, he said, are fixed supplies, while wood, if not ruthlessly used will last forever. It has beauty and variety and readily responds to craftsmanship, the speaker added.

As to the elimination of poverty, Teague claims to be no expert, but he pointed out that the mere supplying of food, clothing, education, living quarters, and the normal requirements of our population on even a decent standard of living would require the work of every American citizen. If this were maintained, he said there would be no such thing as poverty. The vaunted high standard of living in America, he added, is an ideal and not a reality.

The speaker touched upon new materials, such as plastics, but said that they were in their infancy. "We are just on the threshold of vast expansions through the war program," he said, "and we will see the day when houses will be built of plastics, even to the walls." Mr. Ford has built an experimental automobile body of plastics, which in many respects is said to be superior to steel.

Asked if the so-called modern architecture is not too extreme for homes, he replied that it only seems extreme at present, that it will soon be considered typical. "We are never static," he added, "our architecture merges from one period to another."

Skyscrapers, he believes, justify themselves in certain cases, but can be misused. "They have been used to crowd more people together, whereas they should be used to free the ground for other uses. Suppose you have a 20 acre plot on which to house 400 families. The sensible conclusion would be a scyscraper, leaving plenty of unoccupied area, rather than to spread them all over the lot, leaving no play spaces."

Mr. Teague expressed the belief that the world will never be the same as when Hitler invaded Poland. "We will not turn to peaceful activities right away," he said, "but when we do there will be an entirely different economical and social condition. These changes will be important to the architects who might as well begin thinking about them now. The housing being built for war workers will not solve the post-war problem, for they are mostly of a temporary nature, and in locations where they will not be needed. We face the building of a new world."

FROM OUR SUBSCRIBERS

Martin C. Parker of the Summerbell Company, Los Angeles, sent in a renewal of his subscription with this brief comment: "I am now employed on war work but want to keep up my subscription as usual."

Miss Julian Mesic of Oakland, known to Architect and Engineer readers as an architectural modeler, is modeling ships for Uncle Sam. Studio in the Richmond Ship Yards.

PROBLEMS OF COMMUNITY HOUSING

Mills College is announcing a summer lecture course in "Better Housing and Better Planning," with Catherine Bauer (Mrs. William W. Wurster) and Richard J. Neutra providing the combined curriculum on modern building, planning and architectural problems. The courses are scheduled to start June 29, continuing two or three times a week, till August 8.

INSTITUTE CONVENTION

Faced with the task of rebuilding America when victory is finally won, delegates representing seventy-one Chapters of the American Institute of Architects will convene in Detroit on Tuesday, June 23, for the forty-fifth annual meeting of the Institute, lasting three days.

The meeting will be one of the most significant in the history of the Institute, President Richmond H. Shreve of New York declared in announcing the preliminary program. The architects, assembling "in a spirit of service to our nation," will adopt measures increasing their wartime effort to the utmost limits, and lay the foundation for a comprehensive program of action in the postwar world.

Looking forward to new leadership to guide the architectural profession, Mr. Shreve asked all members of the Institute in the balloting now in progress in the Chapters to exercise the greatest vigilance in the selection of delegates and in the nominations for officers and directors. "Strong leadership and earnest action is needed," Mr. Shreve said. Grim realism rather than introspective discussion will dominate the Detroit sessions, he pointed out.

"We shall think of our relationships between ourselves and to the country's demands upon our strength, now and in the future," Mr. Shreve said. "We shall look forward toward the days when we shall face again our national obligations at home rather than, as now, on foreign seas. We shall honor some among us who have greatly contributed to the part we play. We shall have an important assembly.

"The next three years, and years beyond that period, will be fateful for the people of the United States of America. In all probability at the time of the annual meeting of the Institute in 1945 none of the men who are now officers and directors of the Institute will occupy the position he now holds. New representatives of a larger and more widely distributed membership will have been chosen to guide our professional organization after that time.

"The first of this new group of leaders will be chosen this year at the annual meeting in June at Detroit. Delegates from the Institute's Chapters and affiliated state associations who will make those leader-selections will be voted for by the corporate or affiliated members of A.I.A. There are many reasons why these elections of delegates and officers should be made with greater thought and care than has been given to the choice in past years.

"The members of the Institute today more than ever before are aware of the necessity of exercising sound judgment in selecting those in whose care it places the safekeeping and administration of trust funds devoted to high purposes established by generous donors; the leadership of our educational methods and our influence upon the encouragement and development of the arts; the formation of our professional policies in a world of changing and confusing industrial and technical methods and relationships, and to whom it entrusts, above all, the maintenance at a high level of our ethical standards among ourselves, with our fellow-practitioners, and between us and our countrymen and our government.

"In all of these phases of our national activities the Institute today holds high place. Intelligence and strength and courage will be needed to retain that position. To the war effort, to the maintenance of our brotherhood in the stressful and uncertain period just ahead, to the planning of our future as capable and useful workmen, to our need properly to relate ourselves and the contribution we have to make to the communities in which we live—to all these, and therefore to the Institute as the only national organization representing the profession, we should give our best."

Mr. Shreve will preside at the opening session of the meeting on Tuesday, June 23, at 10 a.m. Elbert Duncan Thomas, United States Senator from Utah, will be among the speakers at this session. Edmund R. Purves of Philadelphia, Washington representative of the Institute, will preside at the afternoon session on the opening day. A symposium on "The Architectural Profession Today" is scheduled. At an open evening session honorary memberships and fellowships will be conferred.

Dean Walter R. MacCornack of the Massachusetts Institute of Technology, and chairman of the Institute's committee on postwar reconstruction, will preside at an afternoon session on Wednesday. Long term planning and postwar building programs will be discussed. At a Wednesday evening session tribute will be paid to Albert Kahn, noted industrial architect of Detroit, who has designed many of the country's largest wartime plants. Mr. Kahn will deliver an address.

S. F. ARCHITECTS' AUXILIARY

Officers and heads of committees were selected for the coming year at a recent meeting of the S. F. Architects' Auxiliary. Re-elected as President was Mrs. Harold Weeks, who organized the Auxiliary and was so largely responsible for the success of its first year.

Other officers are: Vice-President, Mrs. Mario J. Ciampi; Corresponding Secretary-Treasurer, Mrs. H. J. Leasen; Recording Secretary, Mrs. Edmond P. De Martini.

Chairmen of Committees: Program, Mrs. A. Appleton; Hospitality, Mrs. H. M. Michelson; Education, Mrs. Dodge A. Reidy; Publicity, Mrs. Ernest Born; Membership, Mrs. J. Lloyd Conrich; War Work, Mrs. A. Appleton.

The meeting was held at the Larkin Street home of Mrs. A. Appleton, Chairman of the War Work Committee. Mrs. Harold H. Weeks, President, was in the chair.

Members are collecting detective stories and novels for donation to the U.S.O.

ARCHITECTS' BULLETIN

Issued For

THE STATE ASSOCIATION OF CALIFORNIA ARCHITECTS

Northern Section

STATE ASSOCIATION MEMBER
OF THE
AMERICAN INSTITUTE OF ARCHITECTS

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Harris C. Allen

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WE ADMIRE MEYER

Our own Fred Meyer is well known by architects—not only throughout California, but throughout the whole country. For many years much of his time and energy, and constantly his sane, sound judgement and advice, have been given to the Chapter, the Association and the Institute. He has served city and state officially and professionally, and the Chamber of Commerce in various capacities.

Now Frederick Meyer has again been called upon for public service. He has been chosen Administrator of Defense Transportation for San Francisco, a critical position at a time of crisis. He has accepted this appointment and refused a recommended $10,000 salary in order to keep the work free from partisan influence.

To say that our profession is proud of Frederick Meyer is inadequate comment. We are not surprised; for he has had our confidence, our admiration and respect, and our affection for lo! these many years. We wish him the greatest success that may be attained for such a difficult series of problems. And, we take pleasure in reprinting an editorial comment from a San Francisco paper:

"Frederick H. Meyer starts off as San Francisco's Administrator of Defense Transportation with an encouraging exhibition of prudence, not to say astuteness. He will serve without salary, which means his appointment did not have to go to the Board of Supervisors, that they have no shadow of control over him and, if we read the situation aright, no other part of the City Hall has any strings on him either.

"Apparently Meyer will get his authority from Joseph B. Eastman, National Director of the Office of Defense Transportation. The San Francisco Administrator is to work in conjunction with the Federal office. There is no lack of authority in the ODT, for the President has made Eastman the czar of all defense transportation matters.

"Thus this connection should give Administrator Meyer all the authority he needs and his avoidance of the status of a paid city official reduces to lowest terms the possibilities of meddling and monkey-wrench-hurling by the City Hall and other professional and amateur meddlers and monkey-wrench-hurlers.

"It was a brilliant thought, and what makes it the more encouraging is that it appears to have originated with Mr. Meyer himself. It shows that he is fully cognizant of the traps that beset public service in a post where the exigencies of the times demand action even if toes are stepped on and is resourceful enough to checkmate the troublemakers in advance. He proposes to have a chance to accomplish something."

Air Raid Board

Bulletin No. 6 has been issued as a presumable "Swan Song" by the Air Raid Protection Advisory Board of the Association. This deals with various forms of protection for industrial buildings, workers and equipment; infor-

mation useful to architects and engineers who may be called on for service or advice.

The Board has performed a function which is recognized by many authorities as extremely valuable and timely. While the Board expresses in this last Bulletin its appreciation to the members who have contributed to its support, the profession and the public owe a debt of gratitude to these gentlemen who have so faithfully and generously given their services to the production of these bulletins.

The reference material accumulated has been put on file at the Association office, 557 Market street, San Francisco.

Modernist Advises Us

Within the past month, the San Francisco architects (and some laymen) have enjoyed the attractive and dynamic personality of an ex-European architect, Eric Mendelsohn—a self-avowed revolutionary.

The message Mr. Mendelsohn brought to the Chapter, to the School of Architecture at the University, and through some public addresses, was not so startling as it might have seemed but a few years ago, or—perhaps—as its author apprehended. With much that he said, his audiences were familiar and sympathetic. To his idealistic ideology, no one could take exception—except in so far as a poor architect might hesitate to "cut his own throat" by refusing to allow his clients any individual inclinations. However, many a client has been persuaded by tactful suggestion and demonstration to alter his viewpoint.

It is surely a good thing to hear an enthusiastic iconoclast, to stimulate our own thought processes, to analyze the changes that have come with progressive civilization, and to anticipate those likely to come. But some of us prefer to call this an evolutionary, rather than a revolutionary process.

BRITAIN'S FACTORIES DODGE BOMBS

Editor Architect and Engineer:

Our Department of Scientific and Industrial Research has evolved a new method of factory layout which has reduced output delays from bomb damage by as much as 50 per cent. I feel that the accompanying brief note on the subject may be interesting enough for you to use in the Architect and Engineer.

The paragraph is offered to you as an example of the war work of British Industries. It is, therefore, free and if you use it perhaps you will be kind enough to let me have, as formerly, a clipping from the issue in which it appears.

Believe me,

Yours very truly,

ROBERT WILLIAMSON,
Industrial Publicity Unit,
Mowbray House, Norfolk St., London, W.C.2.

Mr. Williamson's note follows:

"A new method of factory layout which has reduced output delays from bomb damage by as much as 50 per cent has been evolved by British scientists and engineers.

"Called the 'production lattice,' factories engaged on similar work are not dispersed all over the country but are grouped close enough together to provide swift intercommunication. It there are, say, four processes in each factory, the bombing of No. 1 process in one works means that Nos. 2, 3 and 4 processes there can still be supplied from another factory; while if a No. 2 process is put out of action the No. 1 output can go through No. 2 process elsewhere and return to its own No. 3 and 4.

"To stop output completely, the enemy must put out of action the same process in each factory, and the mathematical odds against this are immense. In fact, because of these odds, the more accurate the bombing the greater the relative advantage of the 'lattice,' or criss-cross of production lines.

"Under the dispersal system, factories are badly placed to assist each other and when one process is put out of action the whole output of the factory stops until this has been remedied. With the "lattice" principle, however, practical examples have shown that in severe attacks up to one-half the output rate for a given section of industry may be saved."

ARCHITECTS MIGRATE

Two San Francisco architects have recently been inducted in the Army—Charles F. Masten with rank of major, and S. F. Heiman as captain.

William C. Ambrose, 244 Kearny Street, San Francisco, takes a Washington job in the Federal Architect's office.

Philip I. Baker, C.E., has moved from 213 26th Avenue, San Mateo, to Harbor Defense, Ft. Stevens, Oregon.

Clarence Mayhew has moved from 712 Montgomery Street, San Francisco, to 330 Hampton Road, Piedmont.

Henry T. Howard from 278 Post street, San Francisco, to 2944 Jackson Street, same city.

Hertzka & Knowles from 369 Pine Street, San Francisco, to c/o W. A. Bechtel Company, 127 Broad Street, Globe, Arizona.

Robert Jorgensen from 2470 Perkins Lane, Seattle, Washington, to 2323 Perkins Lane, same city.

Siberius Y. Saito from 2061 Bush Street, San Francisco, to Barracks 88, apartment 3, Tanforan Assembly, San Bruno.

NEW A. I. A. CHAPTER

There has been a new chapter of the American Institute of Architects formed that will be known as the Central Valley Chapter of California, which takes in the territory from Bakersfield to the Oregon line and state of Nevada. Frank V. Mayo has been appointed secretary pro tem.

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MORE ANENT CONSERVATION OF CRITICAL MATERIAL

To keep pace with new restrictions imposed by Federal agencies, a new and expanded outline of suggestions for the conservation of critical materials has been prepared by Harry R. Dowswell of New York, chairman of a committee of the American Institute of Architects, which, in conjunction with the Producers' Council, is conducting a study of the problem.

Since the first memorandum was drawn up by the Institute committee (Architect and Engineer, May, 1942), it is pointed out, Federal agencies have issued "bulletins and directives which not only restrict building construction to that required directly for war purposes, but, within the types of construction still permitted, place very narrow limits on the materials which may be used."

"In an effort to coordinate all of the data assembled, it has seemed wise to review and expand the original memorandum in the hope that it may suggest further methods of conservation and also be of assistance to those actually engaged in designing construction work," the announcement says. "As in the previous memorandum, the usual trade divisions are followed."

Suggestions for conservation contained in the new memorandum are as follows:

Demolition — Particular care should be exercised when writing specifications for demolition to require that all critical materials be not only salvaged but also sorted into their various kinds so that they may be readily available for reuse or usable kinds of scrap.

Excavation and Grading — The specifications for excavation should require the use of timber coverage during blasting. Mats, heretofore largely used, employ hemp or jute both of which are extremely critical. Again, as in "Demolition" the specifications should require the contractor to salvage and sort all piping, conduit and electric wiring. Utility service connections should be protected and maintained or salvaged for reuse.

Shoring, Sheet Piling and Bracing — This division should be carefully studied so that metal, both structural and sheet, may be eliminated and wood used to the fullest extent.

Foundations—Footings, when of concrete, should be designed, wherever possible, without the use of reinforcing steel. In many cases, masonry may be satisfactorily substituted. Foundation walls of concrete through careful design and location of construction and expansion joints may be constructed without reinforcement. In many localities rubble masonry will be not only satisfactory but economical.

Greater use should be made of concrete blocks for foundation walls, especially for smaller structures. Where ready-mixed concrete plants are available, specifications should require the use of the ready-mixed product and so avoid the use of unnecessary job equipment. Wood chutes should be used wherever possible.

Masonry and Concrete Work—Poured concrete walls should be designed to reduce reinforcing to the minimum. Masonry walls of brick or structural clay tile or concrete units should be designed without the use of metal tiles, wire mesh or other metal accessories. Specify precast concrete, wood or other type of vents in place of metal.

Design masonry exteriors so that openings may be spanned with stone lintels or brick arches on the face and with brick arches or wood lintels for support of backing. Chimneys and fireplaces should be studied to eliminate metal accessories. Openings for smoke pipes can be formed with tile instead of metal pipe rings. Design chimney tops for stone, terra cotta, concrete or similar finish instead of metal.

Granite and Cut Stone—Contractors for these divisions are studying methods of jointing and bonding so as to eliminate metal anchors, etc. Architects should seek their assistance.

Floor and Roof Construction—Eliminate reinforcing from basement floors (in earth), wherever possible, or increase thickness and reduce reinforcing to minimum. Where fireproof structures are, for whatever reason, mandatory, adopt systems of construction requiring the minimum quantity of steel. Concrete joists in combination with tile provide soffits to which plaster may be applied directly and avoid the necessity for lath.

In all cases require the use of wood forms and avoid the use of metal specialties. Local practice frequently employs greater live loads than are necessary. These should be reduced to the minimum consistent with safety.

Walks and Driveways—Concrete walks and driveways may frequently be increased in thickness and the use of reinforcing avoided.

Stairs and Steps—Stairs and steps in fireproof structures should be designed in reinforced concrete, in place of steel. Specify wood forms. Use non-slip inserts or an integral material in place of metal safety treads. Construct exterior steps of masonry, cut stone or wood.

Structural Steel—Except in special cases the use of structural steel will not be permitted. Where permission is given, the design should be carefully studied to insure the utmost value out of every pound of steel used.

A review of most structures will show that assumed live loads are too great and design stresses too low.

Miscellaneous Metal—The use of bronze, nickel and aluminum is of course out for the duration. Steel and iron will be permitted only where their use is absolutely essential. Galvanizinig is not permitted. Where steel or iron is used and exposed to the weather, protection can be obtained by bonderizing and painting.

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Metal Window Frames and Sash—Metal window frames and sash may be used only where specifically authorized. When used, designs should be studied to avoid the use of members introduced mainly for architectural effect. Make every member work.

Roofing and Sheet Metal—The use of non-ferrous metal in connection with roofing has been prohibited. Steel or iron may be used in some instances such as flashings, gutters, downspouts, gravel stops, skylights, ventilators, etc. Careful study of roofing details will develop methods which will eliminate the necessity for metal for several of these uses. Where metal is used, black iron only will be available. It should be protected by bonderizing or heavy bituminous coatings.

Carpentry—The regulations prohibiting the use of metals will necessitate the greater use of wood. The lumber industry, in order to meet the demands, will find difficulty in furnishing seasoned material or the grades and dimensions heretofore available. Architects and engineers should therefore design with these conditions in mind:

1. Wood framing should be designed to avoid use of joist and beam hangers and post caps.
2. Nail sizes should be carefully considered. A well-studied nailing schedule can, with advantage, be placed on the drawings. This practice has already been adopted in some sections of the country.

In finished carpentry it will be found that manufacturers' standard millwork is much more economical in material and production cost than architects' designs. Use standard millwork to the fullest extent. Where necessary to use wood in locations subject to fire hazards, study methods of protection—fireproofing of wood by chemical treatment, flameproofing by spraying with a fire retardant or covering with a non-combustible and non-conducting material, provide varying degrees of protection.

Furring and Lathing—The use of metal for furring and lathing, except woven wire lath, is prohibited. Use masonry furring (structural clay tile, cinder concrete block or gypsum blocks) or wood furring for walls and wood furring for ceilings. Wood furring may be fireproofed where non-combustible furring is required. Since woven wire lath requires steel, plaster base material which avoids the necessity of lath should be used wherever possible.

Interior Marble, Slate and Structural Glass—Producers in these divisions are already at work preparing details which avoid the use of metal. Architects should consult and cooperate.

Terrazzo—The terrazzo industry is offering plastic strips in place of the metal previously employed. Marble mosaics have also been successfully employed as dividers and the industry is endeavoring to develop other materials which may be used.

Tile—Tile is not on the prohibited list. Many installations of wall tile require the use of metal or woven wire lath. Even though woven wire lath is available, it

is suggested that architects investigate the adhesive now being tried since its use permits the application to a dry base. The tile industry has also developed a tile bathtub which may be built in place. This may be found to be a satisfactory substitute for the prohibited cast iron enamelled tub.

Hollow Metal and Metal Covered Wood—This is on the prohibited list except for metal covered doors and frames where fire doors are required.

Weather Strips—Metal weatherstrips are prohibited. Until substitute materials or methods have been developed, storm sash offers the only means of reducing heat losses at exterior openings.

Window and Door Screens—Metal frames and non-ferrous screening are prohibited. Use wood frames and steel or iron screening. The life of steel or iron screening can be considerably extended through the application of selected protective coatings.

Paints—Aluminum, lead, tung oil and zinc are on the prohibited list. Paint manufacturers are prepared to advise architects in regard to suitable substitutes.

Hardware—Hardware manufacturers are required to eliminate non-ferrous metals except for essential working parts. Protective zinc coatings may be used only in hardware exposed to corrosive action. Architects should carefully study each job and eliminate all non-essential hardware. Plastics may, in many cases, be used for trim. Use glass or plastic push plates. Tempered hardboard produces satisfactory kick plates.

Architects and producers of building materials and equipment will discuss the problem of conservation at the seventy-fourth annual meeting of the A. I. A., to be held in Detroit, June 23, 24, and 25.

STRUCTURAL ENGINEERS NOTES

The regular May 5th meeting of the Structural Engineers' Association of Northern California was addressed by Neil B. Musser, a former naval officer, on his experience in the construction of commercial as well as fighting ships.

Frederick M. Green, S. E., has moved to 927 San Antonio Ave., Alameda.

Commencing the first week in May, a series of special courses for engineers was inaugurated by Stanford University. Classes include courses in industrial safety engineering, advanced industrial safety engineering and fire prevention and protection engineering. For information regarding these classes write to the Defense Training office, Room 265, Engineering Building, Stanford University.

Will P. Day's office staff is busily engaged on plans for the new ordnance ammunition depot for the Army and now under construction in Utah. Both Mr. Day and Mr. Michelsen are spending most of their time in Utah.

Harold B. Hammill is designing a 200 by 140-foot machine shop for the Bethlehem Shipbuilding Company in Alameda.

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John J. Gould, C.E., recently flew from San Francisco to Roanoke, Virginia, where he addressed a meeting of the American Society of Civil Engineers on "Saving Steel, Time and Men by the Use of Timber."

SERVICE FROM FLUSH VALVES

"Keep 'Em Flushing" is the title of a new 16-page manual on flush valve maintenance just issued by The Imperial Brass Manufacturing Co., 1200 W. Harrison Street, Chicago, manufacturers of Watrous flush valves.

The manual is designed to provide general help in getting better, more economical service from flush valves. It points out that reducing maintenance time to a minimum, increasing water savings to a maximum, and conserving present equipment are especially important during the war.

The manual is intended, the manufacturer points out, to help the new man responsible for flush valve maintenance and also to provide check-up data for experienced men. It should be especially useful in Army, Navy and Air bases. It likewise contains many points of interest to anyone who specifies or installs flush valves.

The manual starts with basic information on flush valves, showing by means of a set of simple diagrams how a flush valve operates. It then presents a flush valve "trouble-shooter" chart which gives condensed data on how to locate the source of trouble when a flush valve does not operate properly.

Copies of the manual, "Keep 'Em Flushing," may be obtained by writing to Imperial Brass.

BOOK REVIEW

HOW TO READ ELECTRICAL BLUEPRINTS, by Gilbert M. Heine and Carl H. Dunlap. Published by American Technical Society, 58th at Drexel Ave., Chicago, Ill. Price, $3.00.

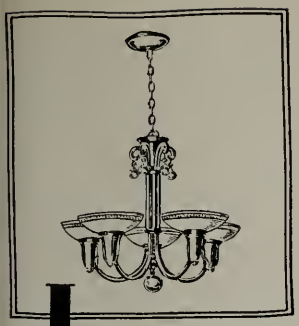
This book is timely, appearing as it does when large numbers of persons are being trained for work requiring an understanding knowledge of the symbols and diagrams which make up most electrical blueprints.

The use of symbols to represent certain objects has long been standard practice in the electrical industry and the beginner must unravel the mystery of the symbol language in terms of real objects before he can understand and read the blue prints put before him.

Noteworthy in the book are the specially prepared pages of symbols in which, opposite to each symbol, is shown a picture of the object represented. Their meanings can be readily understood by a glance at the symbol and picture together.

Sections are included to show how to read blueprints for various branches of electrical work such as: wiring of buildings, bell and signal wiring, automotive wiring, generators and motors, wiring of motor controls and control diagrams.

This book should be a useful dictionary of symbols and a handy reference to fundamental operations of the objects the symbols represent.—H. T. K.



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STOP AMUSEMENT PROJECTS

In a move to free more material and equipment for the war program, the WPB has ordered all construction costing $5,000 or more which is primarily for the amusement of the public be stopped. Construction already underway is included.

The new order exempts only playgrounds for children, strictly temporary construction, and construction costing less than $5,000.

Construction for both the outdoor and indoor amusement of the public is affected by this latest stop order. Included are amusement parks, stadia, race tracks, movie theatres, arenas, baseball parks and the like.

LUMBER FREEZE ORDER

J. S. Knowlson, Director of Industry Operations, recently announced that the Construction Lumber Freeze Order (L-121) would be invoked to take care of the needs of defense housing projects, where vital need for completion of such projects is determined by the War Production Board and the various housing agencies concerned.

The clause permits any producer to sell, ship, or deliver construction lumber upon the specific authorization of the Director of Industry Operations on Form PD-423.

This clause was especially designed to take care of any emergency needs which, if unfilled, might otherwise handicap progress of the war effort. Such emergencies have arisen where local retail stocks proved insufficient to take care of all urgent needs.

NO. 1 MENACE TO CIVILIANS

"Conflagration is the number one menace to America's civilian population," George H. Gray of New Haven, speaking for the Connecticut Defense Council, pointed out at the regional conference of New England chapters of the A.I.A. "The cities of the United States are tinderboxes ready to be set off with ridiculous ease by a few incendiary bombs. Fire breaks should be cut through important areas to prevent flames spreading over wide sections of cities. Fire hazards around defense plants, hospitals, communication centers, and

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other vital zones should be removed at once. Families living in densely populated neighborhods surrounding natural targets for bombs should be evacuated to temporary camps, spaced apart, beyond city limits."

THE USES OF METALS SHIFT

Copper and tin in war have a rendezvous with death. They fly in bullets, whirl in the rotating bands in shells. These strategic metals enter into other vital production and construction for war. In plating, silver can substitute for chromium and nickel, both metals short for war production. Silver is going to be drafted for the duration.

Silver may replace nickel in the nickel and part of the copper too. The old coin of three-quarters copper and one-fourth nickel will be half silver, half copper. Silver sells for $5 a pound, which is about ten times the price of tin. Silver is the cheapest metal that can be obtained without priorities. Electrically silver is better than copper. Industrial uses of silver have been investigated by the National Bureau of Standards.

SALVAGE

A nationwide housecleaning for materials that can be salvaged for war production is reported by the Bureau of Industrial Conservation, Washington. The following is a list of suggested items that may have served their usefulness in the home but at present are of value to the government for war needs.

IN THE BASEMENT

Beds made of brass or iron.

Electric cords (they contain copper wire).

Electric toasters, irons, heaters, fans or any electrical equipment.

Hardware—door knobs, hinges, keys, locks, trim, springs, etc.

Kitchen utensils—old knives, pans, pots, scissors.

Lamps and lighting fixtures made of brass, copper, or iron.

Ornaments—metal ash trays, bowls, statues, vases.

Porch and garden furniture made of metal.

Radios — broken parts containing metal.

(Turn to third cover)

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(Continued from page 60)

Screens made of brass or copper.

Toys—sleds, ice skates, roller skates.

Vacuum cleaners — broken parts made of metal.

Old rubber overshoes, raincoats, bathing caps.

IN THE CELLAR

Coal stoves that are worn out.

Fireplace equipment — andirons, grates, pokers.

Fire extinguishers.

Furnace parts—old grates, doors.

Iron and nickel parts of old gas stoves.

Pipes—pieces of iron, brass or copper piping.

Plumbing fixtures—bath tubs, faucets, sinks, radiators.

Refrigerator parts — ice trays, inside linings.

Tools—all old tools.

IN THE GARAGE

Automobile parts — batteries, chains, license plates, parts of motors, tires, tubes.

Bicycles and tricycles.

Garden tools—lawn mowers, hoes, pick-axes, rakes, shovels.

IN THE YARD

Old tires, inner tubes.

Farm tools.

Logging chains.

Wire fencing and fence posts.

Motor and motor parts.

Playground equipment.

Pieces of old metal—well handles.

Ploughs.

Wheelbarrows.

1940 HOUSING CENSUS

The first Census of Housing ever undertaken in the United States as a part of the 1940 Decennial Census and recently made public, revealed these facts:

There were in the United States as of April 1, 1940 more than 37 million dwelling units of which nearly 35 million were occupied.

These were distributed as follows—In cities of 2,500 and over, 20,597,520; in rural areas but not on farms, 7,151,471, and on farms, 7,106,561.

Nearly 44 percent of all homes were occupied by owners. The average monthly rental of tenant-occupied homes (not including farm homes) was $27.46. This would mean a monthly rent bill, or equivalent in case of owner-occupied, of $762,000,000, not including farm homes. This would be in excess of nine billion dollars annually.

Monthly city rents averaged $30.84 and in rural nonfarm homes the average was $18.35.

The percentage of home ownership declined more than four points in ten years—from 47.8 in 1930 to 43.6 in 1940.

Less than half of the owner-occupied nonfarm homes were mortgaged.

Nine percent of occupied units housed more than 1½ persons per room indicating overcrowding. On farms 16.1 percent had occupancy of more than 1½ persons per room.

More than half—54.7 percent—of all dwelling units had private baths.

More than 18 percent of all homes were in need of major repairs.

The number of families increased 16.6 percent in ten years while total population increased only 7.2 percent, size of families decreasing to 3.8.

In cities percentage of units not equipped with private bath was 23.3; in rural nonfarm, 60.7, and on the farm it was 89.4.

Dwellings needing major repairs were 11.5 percent in cities, 21.4 percent in rural nonfarm, and 33.9 percent on farms.

Among farm homes, 5,939,779 or 78.9 percent had outside toilets; 697,634 or 9.3 percent had neither indoor nor outdoor toilets; 6,011,606 or 82.3 percent had no running water, and 31.3 percent had electric lighting.

The high rent area included the District of Columbia and the states bordering on the Great Lakes and those which form the northeastern coastline from Massachusetts to Delaware.

YOUR BIRTH CERTIFICATE

War has created a widespread demand for birth certificates which are essential for men entering the military service or getting a job in a war industry.

State health departments over the country are being swamped with requests for them, most states reporting that they receive thousands of letters and hundreds of telephone calls daily from persons demanding official proof that they were born and where.

You can get a birth certificate only in the state where you were born. If your birth occurred in 1906, or thereafter, it is likely that you can obtain a copy as soon as the over-worked officials can get around to you, for it was about this time that the recording of birth certificates became compulsory under the law in the majority of the states. In cases where there are no official records, documentary proof of birth must be submitted.

To speed up the process and provide material assistance to Bureaus of Vital Statistics reeling under the staggering load, as well as to the millions of Americans who need to know the location of their birth, the Works Projects Administration, through its Historical Records Surveys, is rushing the publication of Guides to Public Vital Statistics in the various states. These guides have now been published in all the states.

For nearly six years, thousands of WPA workers, including unemployed historians, lawyers, teachers and clerks, engaged in Historical Records Surveys in the different states, have compiled data for guides to sources of billions of unprinted records in the states, cities and 3,066 counties in the nation. More than 1,800 of these inventories and guides have been published. From these and from the great mass of yet unpublished inventories, special volumes are being issued containing information specifically related to the location of birth records.

Copies of the guides containing birth certificate information published by the WPA are being distributed to State Departments of Health, Vital Statistics Bureaus, the Bureau of Census and to the libraries of the War and Navy Departments.

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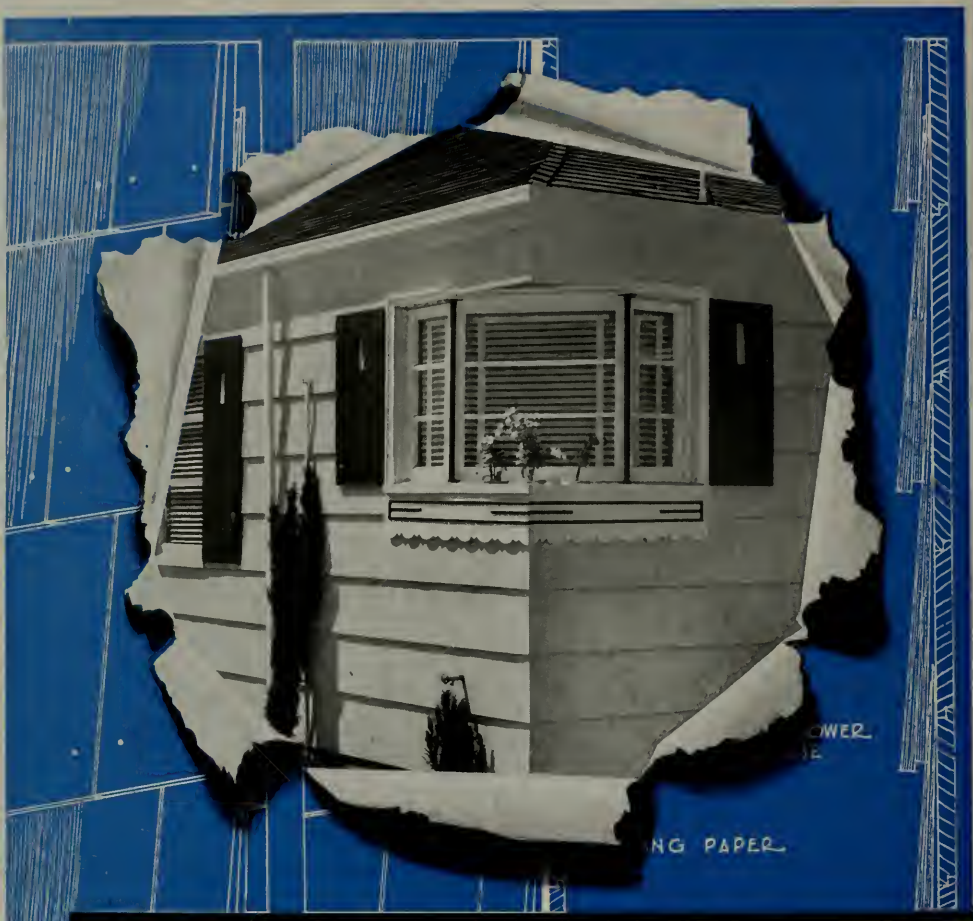

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HOUSING AND PLANNING

Architecture, in this country today, other than that which applies to Housing, may be said to have reached practically the stagnation point. Building construction outside of war needs, is at a complete standstill — a situation without a parallel and one not likely to change for some time to come.

As we indicated last month, the Architect and Engineer is prepared to meet the situation by devoting its contents more and more to the present housing problems and post-war planning.

In this issue the reader will find a diversity of information on building trends with a fairly complete account of the recent A.I.A. Convention in Detroit at which the mobilization of building groups to meet the present emergency was urged and the feeling was emphasized that architects who are "war casualties" should be put to work planning post-war construction at once.

"Career Opportunities in Housing" is the subject of a highly informative article by Arthur A. Hood who predicts lucrative jobs ahead for those who take advantage of light construction engineering and marketing courses offered by nine of our leading colleges this fall.

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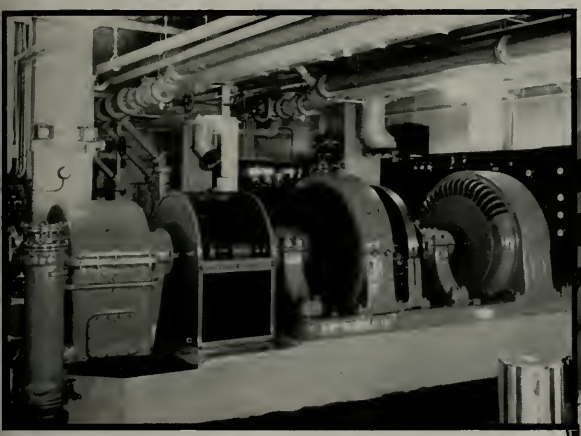

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A fast air-drying, high-gloss, one-coat enamel for finishing machinery, dado, pipe lines and other metal and wood surfaces. Withstands oils and greases. May be applied by brush or spray. Hardens dust-free in two hours.

Count on Fuller for these needs, too—barrel paints, floor finishes, specialized roof paints, rust inhibiting paints, tank paints.

FULLER PAINTS *They last*

"the best that money can buy"

On the Subject of Advertising:

ONE PRIORITY YOU CAN BUY

What products will have "first call" on post-war acceptance?

Will it be the products of the firm whose advertising is now on a "vacation"?

Or will it be the product of the company which now more than ever is impressing its name and goods on the public mind – unceasingly – vigorously – intelligently?

Then, as now, only **one** product of a kind will have **first** call in public choice. Will it be yours? It is one "priority" that can be bought–**now.**

—Research Department, Klau-Van Pietersam-Dunlap Associates, Inc., Milwaukee.

In its field Architect and Engineer is the recognized authority; its various service features, including the "Specification Index" and Architects Reports are used for continuous reference, and the State Association of California Architects gives official sponsorship and endorsement. Only a West Coast magazine concentrated on West Coast problems, methods and conditions, may attain this degree of reader interest and support.

No cursory coverage—but deep penetration into the very heart of the building industry and thorough concentration on its objective of being of irreplaceable service to **the men who specify and buy**—the readers of Architect and Engineer.

ARCHITECT AND ENGINEER • 68 POST STREET • SAN FRANCISCO

CELOTEX Vapor-seal Sheathing Helps Me Meet Emergency Construction Needs *By Replacing "Frozen" Materials*

Big, Weatherproof Boards Handle Easily, Go Up Fast, "Stay Put"! Permanently Protected Against Termites and Dry Rot!

SOFT WOODS are "frozen". Sheet iron and corrugated iron are almost impossible to get. But Celotex Vapor-seal Sheathing is readily available—is not a critical material—and is meeting many of the emergency needs created by lack of "frozen" materials.

Stock sizes include 4′ width (as shown) in 8′, 8½′, 9′, 9½′, 10′ or 12′ lengths. Thicknesses: 25/32″ or ½″. Also furnished for horizontal application in 2′ x 8′ size, with tongue and groove on long edges. Thickness: 25/32″. Asphalt coating on all surfaces and edges resists moisture penetration. Permanently protected against termites and dry rot by the exclusive, patented Ferox Process.

Let Celotex Vapor-seal Sheathing help you speed emergency construction of barracks, storage buildings, tool sheds, temporary schools or recreation centers—any structure where strength, insulating efficiency, and weather protection are important factors! Write for specifications and samples!

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BUILDING PRODUCTS

INSULATING SHEATHING • LATH • INTERIOR FINISHES
ASPHALT SHINGLES • SIDING • ROLL ROOFING

HARD BOARDS • ROCK WOOL BATTS • BLANKETS
GYPSUM PLASTERS and LATH and WALL BOARDS

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ALBERT F. ROLLER, *Architect*
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HAWS — Model 80

. . . has a raised anti-squirt, angle stream drinking fountain head, and is equipped with automatic regulating stream control valve.

HAWS serves N.B.C.

HAWS Drinking Fountains, Model 80, recessed wall installation, were selected for the new home of the National Broadcasting Company in San Francisco. The modern architecture of the structure required drinking facilities which would harmonize. This type HAWS Drinking Fountain blends perfectly with the architecture. HAWS have many types of fountains, of which one or two will fit in perfectly with your specified job. Insist on HAWS.

HAWS DRINKING FAUCET COMPANY

1808 HARMON STREET • BERKELEY • CALIFORNIA

Agents in the following cities:

Chicago • Los Angeles • San Francisco • Seattle • Salt Lake City • Portland
Houston • Atlanta • Philadelphia

RUNNING FIRE — By MARK DANIELS, A. I. A.

• *RECREATION*

Without going into a philological discussion of the word, it is evident that there are two general types of "Recreation," Mental and Physical. For the mature, the mental is more, or at least equally, important. For youth the physical is vital. What the grown up needs is something that will divert his mind from his worries and troubles. Was there ever a time when he needed it more than the present?

Recreation for one man may be tedium for another. It is impossible to prescribe a panacea for all the weary and worried. But there is one institution that can be fostered and maintained by the community—one that will contribute to the health and happiness of all ages—and that is the Zoo. A full day is not too long a time for children as well as grown ups to spend in a well planned Zoo, for with few exceptions everyone is interested in forms of animal, reptile and bird life that are foreign to them.

If the man who is worried sick over the progress of the war or the "retrogress" of his business, will spend an afternoon at the Zoo contemplating a 5 ton pachyderm eating a peanut, he will learn much about the futility of worry. If smiles and laughter are forgotten sensations, an hour spent in the monkey house or watching a cinnamon bear trying to be graceful will revive the memory.

The British have proven that this form of recreation has been more or less a life saver in these times. Here in San Francisco we are blessed with a Zoo that is hard to equal in this country. It is not only a great Zoo, but it was planned through several years of research by Lewis Hobart who has introduced the additional charm of the work of a great architect. Some day, if I can quit worrying long enough to get started, I am going out there myself.

• *TOO MUCH PLANNING*

A great many people are beginning to feel that the architects are overdoing this "planning" business. We are planning everything from the milking stool to planning air traffic in the upper strata. We are humped over draughting boards planning how everything shall be done, how the city shall grow, where our traffic must go, how we shall conduct our recreation, religious worship, education, night life, day life, crime prevention(?). It is all being planned. Everything is "integrated." Everything is an "integral part" of the "plan."

Now, it is just possible that the milker wants to sit on a three legged stool rather than the one legged stool which is an "integral" part of the "plan." Perhaps the traffic will not develop according to the "plan." Perhaps the way of life will change and industrial needs altered completely. Perhaps people may again want to live simply, naturally, and according to their own plan, or no plan at all.

This is no plea for the abandonment of all planning nor for growing up like Topsy (She was a sweet little thing after all.) It is rather a suggestion that we plan not to do too much planning. It is a plea for more individual freedom, where a man can build the kind of house he wants and where he can work, raise children, and educate them according to a plan in which he himself has had some voice. After all, man proposes, God disposes.

• *THE SCAFFOLD*

We read with mingled sympathy and pride, that some forbear "died on the scaffold." It does not matter much what was the reason if the date was far enough back in time. He might have gone to the scaffold as a horsethief but time will make him a wag or a daredevil scamp and we say "Dear old great grandfather died on the scaffold."

But there is one who reaps no reward in the hall of fame—one that we forget and seldom mourn. That is the father who died on the scaffold—with a hod full of bricks.

• *DEFINITIONS*

There is a lot of sophistry mingled with pseudo science in the present day method of arriving at the meaning of words. Some writers are still going to the dictionary to find the meaning of "Architecture." Recently one writer turned to Webster's for a definition and read there that "Architecture is the science of building, especially for the purpose of civil life." He then looked up "Science" and learned that it was "Knowledge, as of physical facts." Civil was, "Characteristic of or befitting a developed social community: civilized." Why he didn't look up Knowledge, Life and Physical is not disclosed. Perhaps he did.

This method of paraphrasing a definition by looking up all the words used in that definition is sheer sophistry. You can make it what you want and still be in the dark. Or you can prove that your interpretation is correct, much as the devout ecclesiast proved that the Bible was an inspired work by quoting a passage from it.

Webster's definitions do not throw much light on such problems as the definition of "Architecture." As a matter of fact, all kinds of light has been thrown on this problem in the last few years with the result that many are beginning to wonder what it is all about, even to the extent of going to the contractor to find out. I once found a definition of the pancreas as the glands that secreted pancreatic acid and that pancreatic acid was the juice secreted by the pancreas. No, you will not find an adequate definition of ARCHITECTURE in Webster's.

• *PHRASES*

G. K. Chesterton once told me that he thought men were happiest in the mediaeval period. True, they were persecuted by the dukes, earls and lords, but they lived their own lives in their own way so long as they met the financial demands upon them.

Perhaps we are coming around to something like that if we can get rid of the gadgets, trick doors, space economy theories, theories of integration, group control, and get down to a simple, wholesome way of living and make room for spiritual expansion, even if it is at the cost of "space economy." If we can accomplish this we may again hear a boy whistling.

• *TEAMING UP*

In Running Fire for May, in an item entitled "When Is an Organization," some little space was devoted to the principle of making big ones out of little ones. We started this building up organizations, so-called,

In This *Total War...*

HOUSANDS of Californians have been forced to lay aside their home-building plans "for the duration."

Bank of America, always the national leader in home financing, continues to offer real estate and FHA loans, modernization loans and many other types of home financing and re-financing. But like you and the other members of your profession, we have put the job of winning the war above everything else.

When peace comes we shall look forward again to stimulating home-ownership throughout the state.

Today, we emphasize that our officers and staff want to serve you in every possible way. Whatever your personal or professional banking requirements, call at any Bank of America branch. You will receive the friendly, personally-interested service that wins friends and holds them.

Bank of America
NATIONAL TRUST & SAVINGS ASSOCIATION
Member Federal Deposit Insurance Corporation

the

LIVABLE KITCHEN

Architects today are not only designing the kitchen for convenience and efficiency but they are making a livable room of it. To this end Paramount Built-in Fixtures meet the most exacting requirements. Their "Deluxe," "Moderne" and "Economy" cabinet fixtures are distinctive in design and construction and may be had in stock sizes or built to order.

Catalog for the asking

Cabinets by Paramount
BUILT-IN FIXTURE COMPANY
5107 Broadway, Oakland, California
Phone Piedmont 8100

because we were told that was what the government wanted. The method was to organize three or four firms, each of which was capable of expanding as an efficient entity, into an inefficient group of four with four heads, the group being no stronger than the weakest member. So now we are calling it "Teaming Up."

We also learn that both the Army and Navy have discovered that size is not everything. They say that what they need is action and results and that, after all, these can best be secured where one man is in control, one man who can make quick and sound decisions. This cannot be accomplished by associating three or four firms, each headed by a man who refuses to give up his authority and his identity, and calling it a high sounding defense organization.

Both the War and Navy Departments have come back to what this journal has advocated for some time which is to turn the work over to some well known architect or engineer, or a combination of both, whose work and experience have proven to be sufficient guarantee of his ability to make decisions and get out work, and make him responsible for expanding his organization to where he can handle whatever job is entrusted to him. Let it be up to him to call in the assistance of other firms. After all he is the best judge of who can do the kind of work needed, particularly if he is to be held solely responsible for results.

This perfecting of the Big Organization is now called by some "Teaming Up" and by some, War Conversion Combinations, but no matter what you call it you can't make a strong chain by hooking up a series of weak links. Washington holds the answer in any event. The Architectural Record says, "Many war conversion combinations of architect-engineer offices have already been effected—, but in some instances the work is still at the other end of the rainbow." The other end of the rainbow, quite apparently, is in Washington, D. C.

• *CHINESE ART*

The development of architecture and the fine arts, as well as abstract designs in China, have revolved on the wheel of time in a way that is enlightening. In the Chou dynasty, beginning in the 12th century B. C. and running down to a couple hundred years before the time of Christ, the arts in China went through a period of development from the intangible horrors of the T'ao-T'ieh to the complexities of design both in sculpture and ornament which resulted in the reactions that came about with the Han dynasty. During the Han period, art in China became so simplified that it was little else than a purely graphic linear outline, like the movement in our architecture from Mid-Victorian to ultra modern. Chinese architecture drifted through the complex and superstitious to the simplest and least ornate of design.

But the wheel kept turning and with revolution after revolution simplicity and complexity came alternately to the top. What it will be with the beginning of the cycle following this war no one knows, but when we think of Chinese art we must not think of it only as the complex, elaborate, flashing, ornate product of the last two dynasties, Ming and Ching, but ought to remember that through the ages the wheel of culture in China has been revolving as it has and is doing in every other country that amounts to anything in the world.

KEEP 'EM FLUSHING

How your clients can get greater savings of man-hours, water, fuel and power from their flush valves . . . .

TODAY, hundreds of thousands of flush valves are on duty in the nation's industrial plants, office buildings, hospitals, cantonments, army and navy bases, schools, apartments, hotels and many other types of buildings.

These flush valves were selected because of their ability to stand up under severe service, for their ability to save water, and for their ability to do their job day in and day out with a minimum of attention.

It is of greatest importance that these advantages be utilized to the utmost today. Valves must be kept flushing—man-hours required for maintenance must be kept at a minimum—and water savings must be increased to a maximum. Due to the fact that during the war, new flush valves probably will not be available for civilian requirements, present equipment must be carefully conserved.

To attain these objectives a complete understanding of the how and why of flush valve operation and maintenance is extremely important for the architect, the plumbing contractor, the building engineer and the maintenance man.

To meet the need for more information on this subject, a new 16 page manual on the maintenance of flush valves—"Keep 'Em Flushing"—has just been published by The Imperial Brass Mfg. Company. (See description below). Write for your copy.

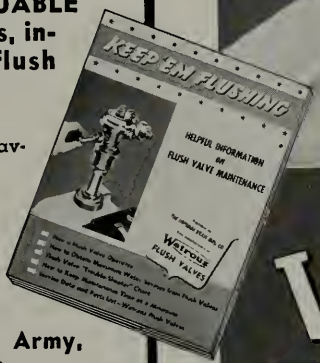
THIS MANUAL IS VALUABLE to anyone who specifies, installs or maintains flush valves . . . *tells*—

- how a flush valve operates.
- how to get maximum water savings from flush valves.
- how to keep maintenance time at a minimum.

includes

Flush valve "trouble-shooter" chart and other practical data.

ESPECIALLY HELPFUL at Army, Navy and Air bases.



Watrous Flush Valves

DIAPHRAGM and PISTON TYPES . . . also furnished with *SILENT-ACTION* equipment

THE IMPERIAL BRASS MFG. CO.

1237 West Harrison Street, Chicago, Illinois

See Catalog 47, Section 27 in Sweet's

MODEL OF AN ORIGINAL DUPLEX BY JOSEPH ALLEN STEIN, SHOWN AT SAN FRANCISCO MUSEUM OF ART. INGENIOUS "STAGGERED" PLANNING DEVELOPS UNUSUAL PRIVACY FOR EACH FAMILY. COST: $2750 PER DWELLING UNIT

Photo by Dean Stone

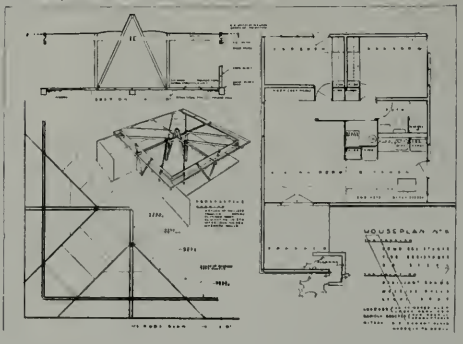
HOUSE PLANS FOR WAR AND POST-WAR

Opening June 23rd and continuing through part of July, at the San Francisco Museum of Art, a showing of "House Plans for War and Post-War," attracted many interested spectators. The show presented in a convincing manner problems of the immediate emergency, embodying a new set of standards for the post-war period. After training here and abroad and study with the great Finnish planner, Eliel Saarinen, the designer, Joseph Allen Stein, practiced in New York and Los Angeles, and is now living in San Francisco.

Scale models illustrated a comprehensive analysis of each problem from both the architectural and planning standpoints, and offered far-reaching suggestions for their solution. The designer believes that any serious attempts at a post-war housing program must necessarily be based on new conceptions of planning, if we are not to repeat past mistakes so glaringly illustrated by the dull, wasteful "gridiron," the restricted development that peters out and leaves a scar on the neighborhood, gradual encroachments by unsightly business establishments that do not bear integral relationship to the needs of the community.

A model with residences for about a hundred families visualized some of the positive points that planning can accomplish when bearing new standards in mind. Such a community offers much more in the way of pleasant living possibilities for each individual family through careful planning of individual houses and their architectural relation to each other. Such as much more privacy indoors and out, and sun, air and view for each house instead of a favored, fortunate few, and so on. With regard to the community as a whole, the

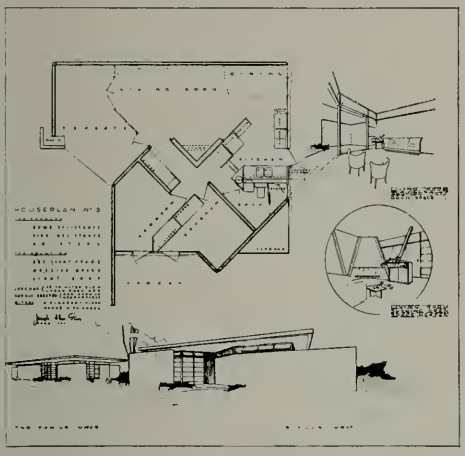
DUPLEX FLOOR PLAN
Shows one and two bed room variant living and dining room area opening onto private terrace; kitchen, bath



IN AN EVER CHANGING WORLD

model indicated desirable over-all considerations necessary to make any real steps forward from our present costly, unplanned, speculative practices. Some of the advantages which each family can share are: a more park-like community with tree-shaded walks and spacious common grounds; no through traffic or streets to cross to reach convenient community facilities; car shelters; areas for children's play and adults' recreation and games.

Highlighted in the exhibition was the "V-house," designed to suggest immediate possibilities of meeting the imperative demand for much more war workers' housing. The "V-house" takes its name from the great timbers that form "Vs" to support the roof. Careful study of the elements in war housing problems enabled the designer to propose a house that calls for no steel or other critical materials or labor. Instead of conventional stud-and-joist construction, interior supports hold the light roof, and massive walls are so grouped that, together, these two structural elements afford a comparatively fire and bomb resistant type of housing, when new group arrangements are utilized. While the house would cost approximately $2000 per dwelling unit in the usual project quantities of 500-1500 houses, a family of three to five persons would find it spacious, convenient and a background for individual needs and interests as well as a pleasant place for family activities. One of the real needs this type of housing recognizes, is the opportunity for the father who may be working night-shifts to sleep undisturbed during the day, while the mother carries on her household work, and the children are playing.



The theme of the exhibition, which was for all too short duration, might be summed up as follows: "Once upon a time . . . the people came and built themselves houses to live in and places to work. Pioneers and builders, we Americans carved a nation out of the wilderness—and then? We made a new wilderness—'Anytown, U. S. A.' Some of us remember how it was before. Those who can, flee stifling crowded neighborhoods to seek the joys of nature in parks, playgrounds, resorts. After the chaos of war, new frontiers call. The democratic challenge is clear: build a new environment, worthy of the dignity of human life, the mighty skills of our technology, and the freedoms we are fighting for."

THE "V" HOUSE, WITH ITS GRACIOUS ENTRANCE AND PRIVATE PATIO. ITS MASSIVE WALLS ARE GROUPED FOR PRIVACY AND RELATIVE PROTECTION AGAINST BOMB FRAGMENTS AND FIRE

Photo by Dean Stone

DEVELOPMENT OF COLOR LITHOGRAPHY

Color lithography is a print medium which has enjoyed a revival of enthusiasm by artists in the last few years. Its earliest successful use was by T. S. Boys in the 1820's after which it degenerated into a cheap, commercial medium. Edouard Manet, famous 19th century French artist, made only one lithograph in color which brought about the revival in which many great modern artists have participated. The San Francisco Museum of Art announces an exhibition of Modern Color Lithography to August 8 which surveys this development in France up to the present time. Represented are Renoir, Manet, Cezanne, Lautrec, Bonnard, Vuillard, Denis, Roussel, Signac, Redon, Cross, Sisley, Forain, Guillaumin, de Chirico, Lurcat, Rouault, Dufy, and Marie Laurencin.

PRE-COLUMBIAN ARTS SHOWING AT DE YOUNG MUSEUM THIS MONTH

"Before Columbus, What?" would be an apt title for the exciting exhibition of pre-Columbian arts now showing at the de Young Museum and scheduled as the Summer headliner.

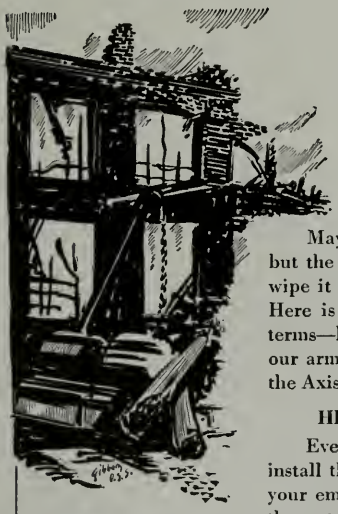
Spanning a period of 2,000 years, from about 500 B.C. when the "Glory of Greece" was at its zenith to 1492 when an obscure Italian navigator set out to prove the world was round, the exhibit is a magnificent survey of the arts and crafts of this hemisphere as they were created before the Spaniards "came, saw and conquered."

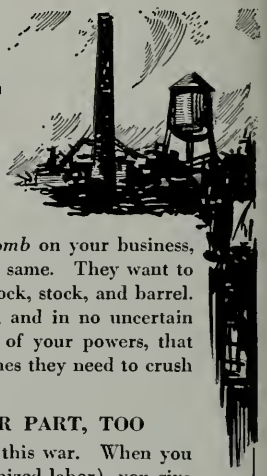
Stone sculpture, jewelry in gold and silver, precious and semi-precious stones, ceramic ware and textiles representative of these earliest of native American cultures — Mayan, Inca, Toltec and Aztec—all give testimony to one of the greatest of world cultures, and one that has too often been neglected in art exhibitions. The combined efforts and generosity of the Santa Barbara Museum of Art, the Middle American Research Institute, the University Museum of the University of Pennsylvania and various individual lenders promise to make this one of the most outstanding exhibitions the de Young has ever offered.

MISCELLANEOUS SUMMER EXHIBITIONS AT THE DE YOUNG MUSEUM

Besides the excellent showing of pre-Columbian arts of the Americas which heads the list of new summer exhibitions at the de Young, there are several smaller shows, each highly interesting in its own field.

Perhaps the most unique of these is an exhibit entitled "California Sales Circuit of Watercolors and Prints by 35 Bay Area Artists." The word, "sales" has been stressed particularly in this show, as the pre-requisite for displaying these works is that each art gallery, school or club guarantees to purchase at least one watercolor or two prints from the exhibit. Beatrice Judd Ryan and Marion Cunningham are responsible for this novel idea, the purpose being to stimulate interest in and sales of the works of local artists, many of whom are first-rate craftsmen in the national art scene. All watercolors are priced at $10.00 and the prints are each $5.00.





TARGET FOR TONIGHT

...*Your Business?*

Maybe they won't actually come and drop a *bomb* on your business, but the Axis war lords have their eye on it, just the same. They want to wipe it out as a competitive force—or take it over lock, stock, and barrel. Here is a threat that you can reply to *now*, today, and in no uncertain terms—by buying Defense Bonds to the very limit of your powers, that our armed forces may have the guns, tanks, and planes they need to crush the Axis *once and for all.*

HELP YOUR EMPLOYEES TO DO THEIR PART, TOO

Every American wants the chance to help win this war. When you install the Pay-Roll Savings Plan (approved by organized labor), you give your employees that chance. For details of the Plan, which provides for the systematic purchase of Defense Bonds by voluntary pay-roll allotments, write: Treasury Department, Section S, 709 12th St. NW., Washington, D. C.

Make Every Pay Day "BOND DAY"

Save with U. S. *Defense* BONDS ★ STAMPS

This space is a contribution to Victory by

ARCHITECT AND ENGINEER

Another show—one of the timeliest of the moment—is the display of "Camouflage Models for Civilian Defense" made by students of the Jean Turner Art School of San Francisco. These models are of particular interest to local citizens in that they are of actual, recognizable objects in the Bay area—places and buildings which may become strategic enemy objectives at any time. Although they are constructed in miniature, they are on a sufficiently large scale for anyone to be able to recognize the kind of materials and the technique that would be employed to camouflage the actual sites. Among the buildings "camouflaged," along with gasometers, oil storage installations and tank farms, is the de Young Museum itself.

Rounding out the mid-summer schedule are collections of recent photographs by two excellent California artists. The black and whites of the East Bay photographer, Grant Oliver, are shown for the first time; Josef Muench, the well-known Santa Barbara artist, contributes the other gallery of photos of landscape and portrait, the former finding contrast in desert and mountain snow scenes, the latter offering sensitive studies of native Indians against a background of their natural surroundings.

The young Southern California artist, Douglas Parshall, is represented by a fine showing of landscapes, figures and various studies in watercolor.

TO BRING ARTISTS AND ART BUYERS TOGETHER

The effects of the war are beginning to be felt in the field of art for advertising and other commercial purposes, as the draft is taking artists every day, thereby narrowing the field of, and increasing the demand for, available talent. In order to bring competent artists to the attention of those persons who buy and use art work, Associated Chicago Artists, Inc. is offering a new plan in which artists, buyers and users of art may participate.

A book is to be published quarterly containing full-page showings of the work of artist-members in black-and-white, giving his, or his representative's name and address. Other promotional material will be issued from time to time.

The capacity and talents of every artist-member will be carefully investigated, thus saving the buyer and user of art time by having the selection of artists limited to only the best talent available. The Advisory Board includes: Glenn Price, designer; Roswell F. Brown, illustrator; Howard W. Rapport, art director, The Celotex Corp.; Harvey W. Olsen, art director, Needham, Louis & Brorby, Inc.; Lyman Simpson, art director, General Outdoor Advertising Co.; Frederic Tellander, illustrator; Henry Harringer, designer; R. Fayerweather Babcock, artist; Glenn V. Johnson, art director, International Harvester Co.; and Egon Unger, art director, Louis & Cowan & Company.

Every type of art will be represented—illustration, design, lettering, lay-out, fashions, etc.—whatever the need might be.

The first issue of the publication will be in the mails on or about August 1st, 1942. For further details, write: Associated Chicago Artists, Inc., 840 N. Michigan Avenue, Chicago, Illinois.

MURALS AND MOSAICS

A pre-view of murals and mosaics in the Administration Building of the Long Beach Municipal Airport on June 20 attracted a select and critical gathering of artists and laymen interested in the work of Grace Clements who designed both the murals and ceramic tile floors in the building. Miss Clements' color sketches of the Airport murals and mosaics were exhibited at En's gallery in Los Angeles from June 17th to July 11th.

18 ARTISTS IN GROUP EXHIBITION

Americans 1942 is the cryptic title of an exhibition at the San Francisco Museum of Art, lasting until August 5. Composed of work by 18 artists from 9 states, California is well represented by 6 artists—San Francisco by Charles Howard. The other Californians are Knud Merrild, Donal Hord, Rico Lebrun, Helen Lundeberg, Fletcher Martin. Chosen by the Museum of Modern Art in New York City, the work has an even wider aesthetic range than the geographical area which the artists represent. Although much of it may be described by the terms American Scene, Social Comment, Surrealism and Abstraction, there is some which cannot be fitted into these categories.

ONE MAN SHOWS OF BAY AREA ARTISTS

Local artists are having their fling at the San Francisco Museum of Art. Contemporary art, and particularly the local product, has always been the interest of the Museum which offers an extremely varied selection of familiar and new names. Private Robert Bach, stationed at Pearl Harbor for the last six months, exhibits watercolors which illustrate wartime conditions there before and after December 7th. Waldemar Johanson, an able watercolorist and in charge of the stage design activities at Stanford, is showing a group of recent watercolors and Antonio Sottosanti, young East Bay artist, whose sensitively colored gouaches have attracted attention in recent S. F. Art Association exhibitions, is sponsoring a mid-July show of his own work. Esther Bruton, one of the famous trio of artist-sisters of Alameda, has a display of recent watercolors of Mexico.

SAN FRANCISCO MUSEUM OF ART

Exhibitions

SCULPTURE by Isamu Noguchi—to August 2.
AMERICANS 1942—to August 5.
WATERCOLORS by Waldemar Johanson—to July 26.
ARTISTS UNDER FORTY—to August 12.
PAINTINGS by Antonio Sottosanti—to July 26.
SCULPTURE by Marina Nunez Del Prado—to August 12.
MODERN COLOR LITHOGRAPHS—to August 8.
WATERCOLORS by Esther Bruton—to August 2.
FIFTY PAINTINGS BY TEN ARTISTS—to August 9.
PAINTINGS by Ina Perham Story—to August 9.
LITHOGRAPHS by Irving Norman—to August 9.
SAN FRANCISCO ART ASSOCIATION GALLERY
Avis Zeidler—to July 27; Amy D. Flemming—to August 10.

M. H. DE YOUNG MUSEUM

Special Exhibitions

ARTS OF AMERICA BEFORE COLUMBUS (500 B.C.-1500 A.D.)—opening July 11.
PAINTINGS AND DRAWINGS BY RICO LEBRUN —through July.
California Sales Circuit of Watercolors and Prints by 35 Bay area artists assembled by Beatrice Judd Ryan and Marion Cunningham — through July.

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may not see his *Biltwel Furnace* every day; but he will be conscious of its presence and always thankful for your foresight in assuring his whole family of warm, healthful room temperature at low cost.

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FHA REMODELING LOANS

Remodeling loans on the FHA plan have been converted to a strictly wartime basis, according to Federal Housing Commissioner Abner H. Ferguson.

"The President has declared that existing structures are being counted upon to absorb a large proportion of the 1,600,000 war workers who need housing," Mr. Ferguson said.

Outlining the new loan terms, he explained that FHA remodeling legislation "is designed to encourage needed war housing—through remodeling and conversion of existing structures to provide homes for workers in war production areas."

A new type of "war conversion loan" up to $5,000 is available for converting an existing structure into additional living accommodations for war workers. The remodeling job must be in a designated war production area.

"This type of loan, with a term as long as 7 years, is of first importance because of its direct contribution to the war effort," Mr. Ferguson said.

Examples were cited by FHA of the type of work which may be done. Several rooms suitable for rooming or housekeeping purposes may be remodeled. An attic or a second story may be remodeled into an apartment. A structure not now a dwelling may be remodeled into a one- or multi-family house.

In spite of some misunderstanding about the new FHA terms, loans up to $2500 are available for necessary maintenance and repair work to safeguard health, safety, and maintain property in good working condition. These loans are not limited necessarily to war production areas. "Congress envisioned in the new amendments a halt to mere luxury repairs and home beautification," Mr. Ferguson declared. "But this does not imply a wasteful scrapping of America's 80 billion dollar investment in property. On the contrary, sensible and necessary maintenance which keeps homes and business property in good working condition will be continued."

WHAT *is the practical and patriotic thing to do about vacations this year? Are they to be suspended for the duration?*

DEFINITELY NOT! Uncle Sam endorses and recommends proper rest and recreation as an essential investment in reconditioning for greater war effort.

ALL RIGHT. *Suppose you are one who doesn't want to wear out a lot of tires this year driving long distances on a vacation trip.*

IF SO, take your vacation in Southern California, where hundreds of fine hotels, resorts and play places are within short driving distances. If you want to leave your car at home.

AW, GEE! *I live here. What fun can I get out of a vacation in my own "back yard"?*

YOU could spend a lifetime of constant travel in Southern California without exhausting its marvelous opportunities for recreation, rest, relaxation, play and all-out FUN. Where else, within a relatively small orbit, can you find mile-high mountains with sapphire lakes and streams, whispering pine forests, sparkling beaches, romantic islands, bubbling mineral springs and orange groves—where else a more ideal climate? Where can you find a greater galaxy of sports to choose from?

OR, what about the unique experience of a "city" vacation this year? Move away from the house and housekeeping worries and spend a week or two at one of our fine metropolitan hotels. A thousand servants are at your beck and call. Many hotels offer facilities for dining, dancing, tennis, golf, swimming, badminton, sun-lazing, and a host of other sports and social pastimes.

THAT *sounds great . . . but, in the face of the rising costs of living, I don't think I can afford a vacation this year.*

YOU can affort and *must* have a vacation. Hotels in Southern California are continuing their rates at pre-war levels. There is a hotel or resort in Southern California for every income and every budget. Eliminate high transportation costs and you will find that a Southern California vacation costs you no more than living at home. And it's false economy not to give the "human machine" its needed rest and relaxation.

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Drain pipes and fittings in many Federal buildings, including the San Francisco Mint, pictured above, are protected with **Corrosiron** — a positive guarantee of long life and sure resistance to corrosion.

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he largest single plant in the War duction Drive is the Newport News building and Drydock Co., emying 27,000 men; the smallest is Armstrong Manufacturing Co. nt at Portland, Ore., which employs

* * *

f you find electric fans scarce this mmer, consider that the copper m a dozen such fans is enough to ovide all the copper needed in ricating a 20 mm. aircraft cannon make it hot for the Japs and Nazis.

* * *

The steel that goes into a single wing machine will make a high exsive shell for a 75 mm. field howit- and the steel in two large outard motors would make a sub mane gun with which our soldiers uld shoot down Japs.

* * *

One electric dry shaver will keep e man well-groomed, but the copr in a hundred electric dry shavers ould make a smoke tank for an airane—a smoke tank which, by throwig a screen around a fighting ship, ight save many American lives.

BOOK ON PLANT EFFICIENCY

A booklet on plant efficiency has een published by the Division of Inrmation, War Production Board, nd is now available for distribution, request.

The booklet is called "Plant Efficieny — Ideas and Suggestions on Inreasing Efficiency in Smaller Plants."

It is in simple terms and is designed rimarily for smaller war plants or for lants which are just getting into war roduction and which might be able increase production by a study of fficiency procedures.

Copies may be obtained from reional and local offices of the War roduction Board, located in 120 ities; from local offices of the Divion of Information, Office for Emerency Management; or by writing to he Division of Information, Office for mergency Management, in Washingon.

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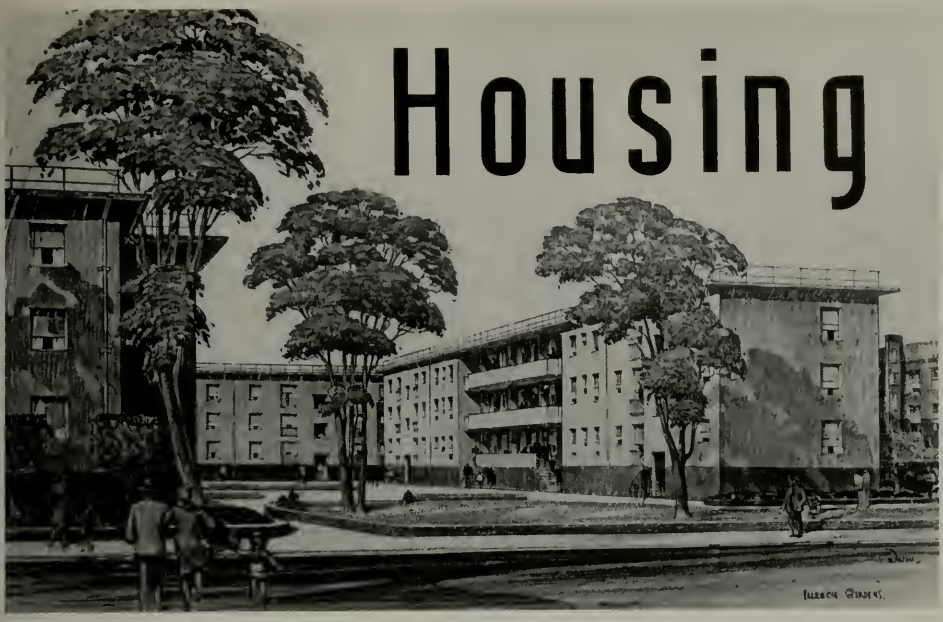
POTRERO TERRACE, SECOND MAJOR PROJECT TO BE COMPLETED BY THE HOUSING AUTHORITY, CITY AND COUNTY OF SAN FRANCISCO

Housing



SAN FRANCISCO BUILDS LOW RENT HOMES

Since the Housing Authority of the City and County of San Francisco began to function in 1938 three major projects have been completed at a cost of $4,190,000 and half of a fourth has reached the completion stage with an additional outlay of $490,000. Some 1359 families are benefiting by these improvements which mark only the beginning of a housing program that, when finished, will place San Francisco well out in front with other house-minded communities.

With such a splendid record to date it is rather distressing to note the public indifference to the local housing movement. Despite the fact that the newspapers have carried frequent references to the several projects and that the Junior Chamber of Commerce and other organizations have been active in trying to stimulate community interest, it is a lamentable fact that a great many people in San Francisco are not even aware of the locations of these projects, nor have they any idea of the amount of money that has been expended to provide decent homes for the low income population as well as improved accommodations for some of the war workers and their families. People don't seem to realize there has been a need for better housing or that, in spite of added accommodations already provided, there is a demand for still more improvements. Besides the four projects already referred to the S. F. Housing Authority has plans prepared for seven others which will bring the total cost of construction to $9,675,000. The remaining seven projects will comprise 1496 dwelling units, construction of which will go forward just as soon as priorities and other obstructions can be cleared.

Primarily these housing projects throughout the country were more or less idealistic plans to do a much needed and worthy work. In some cities it worked out well; in others they became more or less real estate speculations; in several instances they just dawdled along. In San Francisco, upon the appointment and establishment of a legally constituted authority, the commissioners, named by the Mayor, set out to do a really fine job for the city, with Architect Albert J. Evers acting as executive director.

PROGRESS PICTURE OF POTRERO PROJECT

Frederick H. Meyer, John Bakewell, Jr., and Warren C. Perry, Architects

The dwelling units in the completed projects vary in size from three and one-half rooms to seven rooms per unit. The half room is one of the old U. S. H. A. ideas. It is a space used for dining which is large enough for its purpose but not large enough to be classed as a room. Units are planned with strict economy and full consideration to sun and wind exposure, play ground areas, heating, public utilities and everything deemed essential to clean, healthy family existence. For example, Ping Yuen, the Chinatown project (the only project more than three stories in height) is as complete as any structure of its type in the city. The buildings vary in height from six to seven stories, are class "B" construction, with such conveniences and utilities as garbage chutes, central heat and hot water, electric elevators, indoor laundries and drying rooms, open air laundry drying lines, a clinical health center, craft rooms, social hall and community center. The dwelling units in the three steel and concrete buildings which comprise the group have 3½, 4, 4½, 5½, and 6½ room units and rent for the amazingly low figures of from $13.00 to $28.00 per month. Think of it! A six and one-half room apartment with all the utilities, heat and hot water, for $28.00 a month and right in the central part of the city! Similar quarters in the district in class "C" buildings are bringing $60.00 to $75.00 per month. The reasonable rents will be a godsend to low income Chinese families and in the case of Ping Yuen no complaint has been raised for the buildings are to be devoted to the housing of our underfed and ill housed Chinese.

The rent grades of the Chinese project are substantially the same as all the others, being determined by the individual family incomes. What has been accomplished by the Housing

RENT GRADES OF ALL PROJECTS

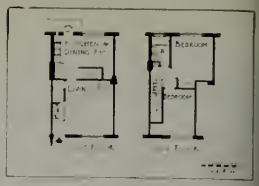
Unit Size	Rents Grade A	Grade B	Grade C	Grade D
3½	$13.50	$17.00	$20.80	$24.00
4½	15.00	18.50	22.30	26.70
5½	16.50	20.00	23.80	28.00
7	17.00	20.50	24.30	28.50

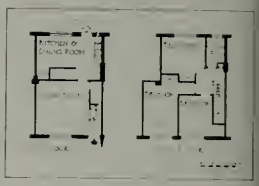
AIRPLANE VIEW OF POTRERO PROJECT, SHOWING SAN FRANCISCO BAY BRIDGE IN BACKGROUND

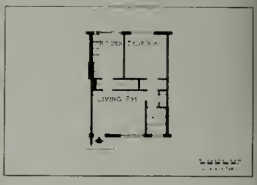
PLOT PLAN BELOW

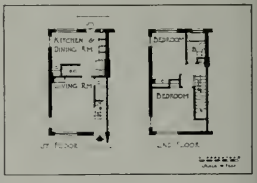
Authority to date and what has been planned for the future is pictured on this and succeeding pages. The list of names of San Francisco architects identified with the work reads like an architectural blue book. The names should be sufficient guarantee of the excellence of the work:

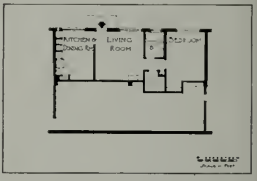
Arthur Brown, Jr., Frederick Meyer, John Bakewell, Jr., Warren Perry, Albert Roller, Roland I. Stringham, Harry Thompsen, Jr., William W. Wurster, William Merchant, Clarence A. Tantau, Lester W. Hurd, James H. Mitchell, Douglas D. Stone, Charles Rogers, T. W. Pflueger, Lewis P. Hobart, Henry H. Gutterson, Ernest Born, W. D. Peugh, Edward Page, Henry Howard and Mark Daniels.

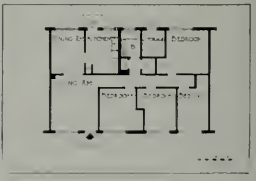








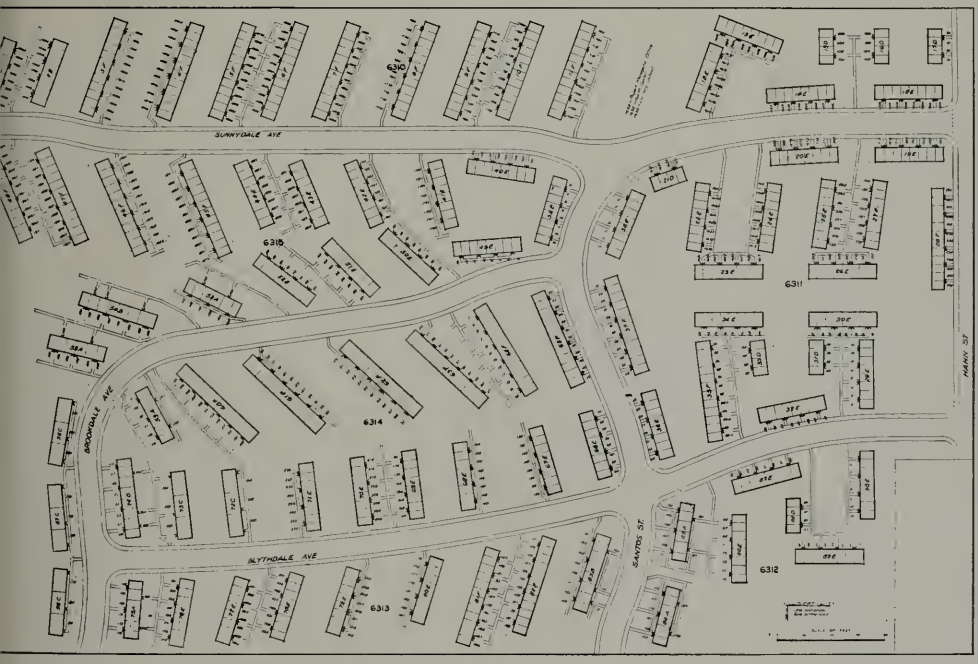




ABOVE—FLOOR PLANS

LEFT—PROGRESS PICTURES OF SUNNYDALE PROJECT

PLANE VIEW OF SUNNYDALE PROJECT. A UNIQUE AND CAREFULLY
NNED LOW INCOME HOUSING COMMUNITY



T PLAN OF SUNNYDALE

AN ATTRACTIVE UNIT OF THE SUNNYDALE HOUSING PROJECT
Albert F. Roller and Roland I. Stringham, Architects

SAN FRANCISCO'S PUBLIC HOUSING PROGRAM

DEVELOPMENTS	Total Land Cost	Area in Acres	% Coverage of Site	Dwelling Units	Construction Cost
HOLLY COURTS (Arthur Brown, Jr)*	$ 68,390.00	2.68	36.60	118	$ 387,667.01 (Barrett & Hilp)
POTRERO TERRACE (Frederick H. Meyer, John Bakewell, Jr., Warren C. Perry)*	95,257.26	17.16	13.10	469	1,578,345.52 (Meyer Constr. Co.)
SUNNYDALE (Albert F. Roller, Roland I. Stringham)*	77,094.12	48.83	16.08	772	2,225,541.64 (Barrett & Hilp)
VALENCIA GARDENS (Harry A. Thomsen, Jr., William Wilson Wurster)*	230,422.50	4.96	26.95	246	842,534.26 (Meyer Constr. Co.)
BERNAL DWELLINGS (William G. Merchant, Clarence A. Tantau)*	228,403.40	4.47	31.30	201	699,182.00
WESTSIDE COURT (Lester W. Hurd, James H. Mitchell)*	172,273.20	2.604	29.2	136	605,305.00 (Carrico & Gautier)*
DE HARO PLAZA (Douglas Dacre Stone, Charles E. J. Rogers)*	54,511.12	4.822	27.5	135	495,000.00
HUNTER'S VIEW (Timothy L. Pflueger, Lewis P. Hobart)*	29,275.00	22.78	12.1	150	536,250.00
NORTH BEACH PLACE (Henry H. Gutterson, Ernest Born)*	299,000.34	4.602	27.77	226	730,700.00
PING YUEN (Mark Daniels, Henry T. Howard)*	380,800.00	2.617	32.5	231	845,600.00
GLEN CRAGS (W. D. Peugh, Edward B. Page)*	29,604.78	29.06	12.88	171	728,100.00

*Architects. **Contractors. ‡Estimate.

ROW OF SUNNYDALE UNITS BEFORE
COMPLETION OF STREET WORK

THIS IS THE MAJOR PROJECT OF THE
HOUSING AUTHORITY OF THE
CITY AND COUNTY OF SAN FRANCISCO

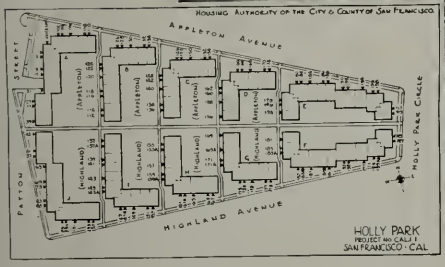
A CLOSE-UP OF ONE OF THE COMPLETED HOMES ON OPENING DAY . . .

PICTURE ON THE RIGHT SHOWS TRIO OF SCHOOL GIRLS

ADMIRING SCENERY FROM A LIVING ROOM WINDOW

BERNAL HOUSING PROJECT, BERNAL HEIGHTS, SAN FRANCISCO
William G. Merchant and Clarence A. Tantau, Architects
Street view of large unit on Page 31

DE HARO PLAZA HOUSING PROJECT, SAN FRANCISCO
Douglas D. Stone and Chas. E. J. Rogers, Architects

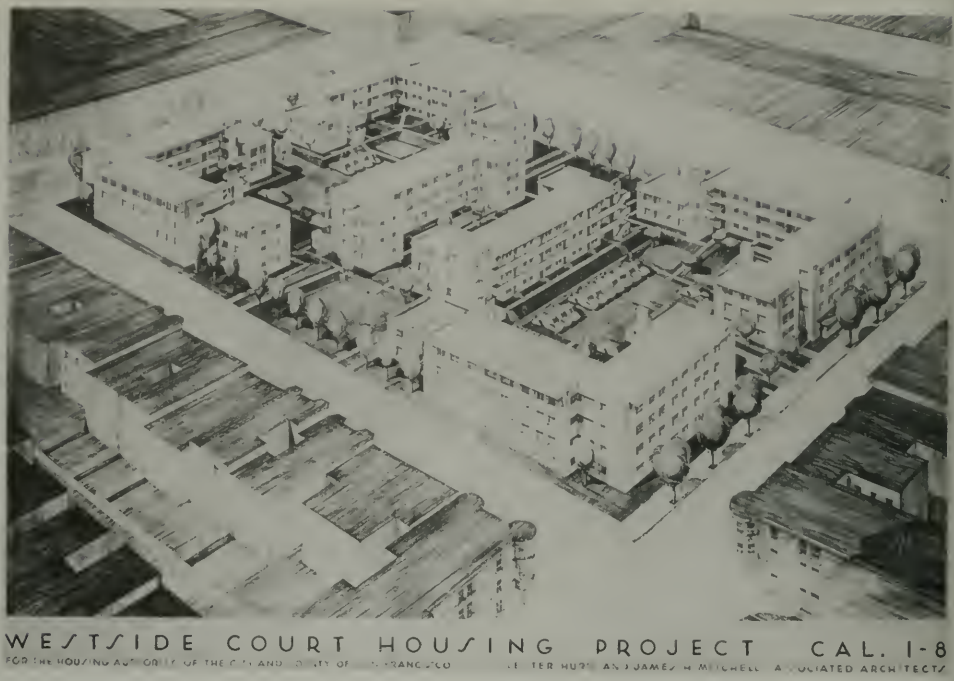


HOLLY PARK—Upper picture: Street view; middle photo: Playground;

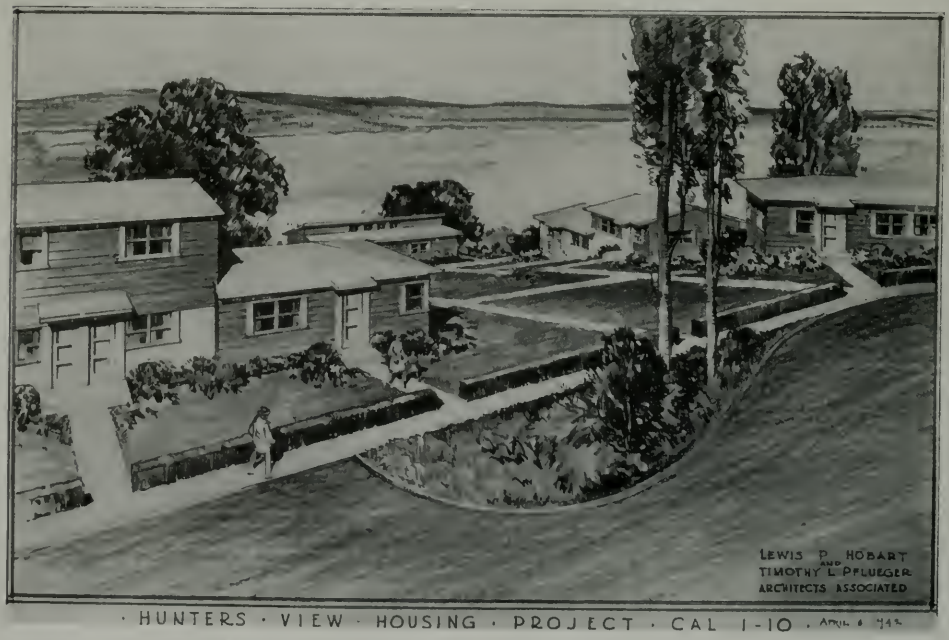
Below: Holly prize garden

The plan shows unique orrangement of housing units

Arthur Brown, Jr., Architect



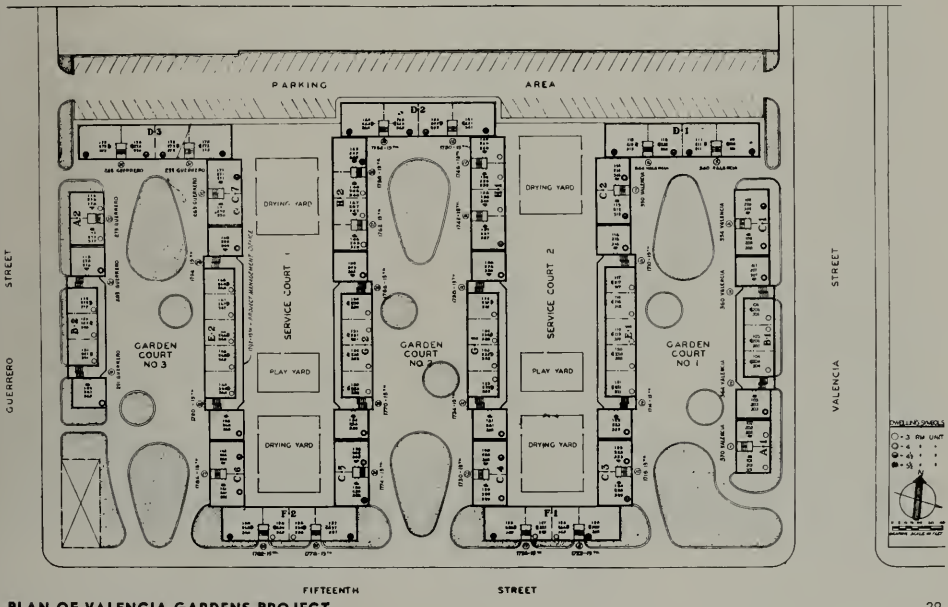
WESTSIDE COURT HOUSING PROJECT
Lester W. Hurd and James H. Mitchell, Associated Architects



HUNTERS VIEW HOUSING PROJECT
Lewis P. Hobart and Timathy L. Pflueger, Architects Associated

VALENCIA GARDENS HOUSING PROJECT

Harry A. Thomsen, Jr., William W. Wurster, Architects Associated



PLAN OF VALENCIA GARDENS PROJECT

PING YUEN CHINATOWN HOUSING PROJECT
Mark Daniels and Henry T. Howard, Associated Architects

GREAT BRITAIN HOUSING

Despite shortages of materials and manpower, Great Britain has continued to build some permanent public housing during wartime.

The amount of such housing put under construction has, however, declined each year since the war began. Immediately preceding the war, the rate of British residential buildings, both public and private, was about 300,000 homes per year. From September, 1939, when the war began, through March, 1940, 95,000 units were completed. This dropped to 30,000 in the period April to September, 1940, then to 11,000 from September, 1940, to March, 1941. Since April, 1941, only 4,000 family houses have been built.

Also many of the permanent homes now being built are convertible. They are designed specifically for wartime use now, but provision is made for either additions or remodeling later on, which will fit them for peacetime use.

Sketch of Ping Yuen Chinatown Housing Project

ARCHITECT PREDICTS POST-WAR HOUSING SHORTAGE

A scarcity of all types of housing will create a staggering task for the building industry when the war is over, William Orr Ludlow, fellow of the American Institute of Architects, declares in a report to the Institute. Thousands of small homes now being erected for war industry workers will be useless after the emergency, according to Mr. Ludlow.

Federal financial aid will be necessary if the building industry is to avoid post-war disaster, Mr. Ludlow points out, urging the public not to insist on a "hands off" policy by the Government. The totalitarian setup required by war cannot be abolished overnight without dire consequences, he warns, not only to the building industry but to many other activities which must get on their feet again if this nation is to survive economically.

"One estimate indicates that in the decade

after the war we shall need 13,000,000 new homes," Mr. Ludlow says. "Nor will these figures be cut down by the use of the thousands of new dwellings being erected today for war workers. Most of these are built in places where they will not be needed, and many are more shacks than houses. It is true that some are of the demountable type that can be taken apart and the parts reassembled. It is probable that platform trucks will carry small houses bodily to new sites, but the housing thus provided will be merely a drop in the bucket.

"There are approximately 40,000,000 dwelling units in this country. By 1945, 30 per cent of them will be fifty years old, which is past the limit that the average house or apartment remains in decently habitable condition. People are not going to live in such homes if they can help it.

"We must remember too that our population is increasing rapidly. From 1930 to 1940 we added 9,000,000 people to our numbers and this rate of increase is likely to be maintained. But perhaps more significant than the population increase is the fact that the marriage rate has risen greatly, and along with it the birth rate.

"Also important is the increase in the number of families, due to the increase in marriages and to the fact that families are much smaller than formerly. More dwellings are needed to house the same number of people. Vacancies are now very low in many places, and practically non-existent for rentals below $35 a month in most of all defense areas.

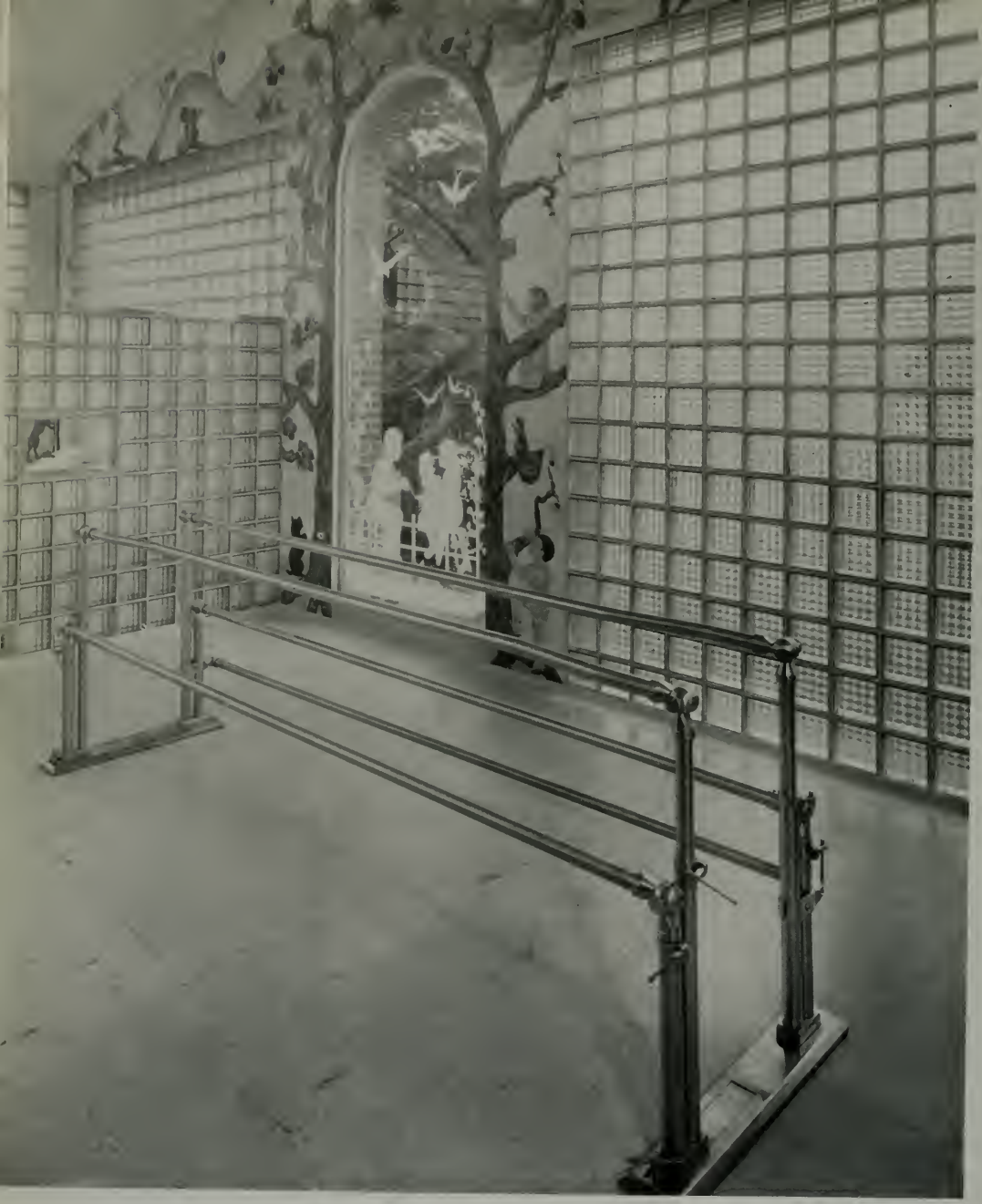
"For the duration, practically nothing will be done in slum clearance, one of the most pressing problems that has faced this nation for years past, for slums affect health, crime, morals, and taxation. Statistics show that even now, if we were to do a half way job of slum clearance we would need 1,000,000 new housing units.

"It is hardly necessary to add that obsolescence and deterioration apply to all such types of buildings as hospitals, schools, churches, municipal and public buildings of all kinds. Add to these waterworks, sewage disposal systems, and the public utilities, and thousands of miles of new roads and road repair work, and the sum total of building work is staggering."

Bank deposits and insurance investments available for building will probably be greater at the termination of the war than they are now, because on the average people are earning more money, Mr. Ludlow points out. "Even so, private money will not be enough," he continues. "We shall need and will probably get large sums of Federal money. For we are quite agreed that it is as necessary to win the peace as to win the war. We cannot possibly win the peace, either here or anywhere else in the world if we sink down into economic collapse. A continued provision of Federal funds is the only thing that will keep us from it.

"It is true that there will be insistent demands that this tremendous expenditure of money by the Government shall stop at the earliest possible moment. We don't want government control, and we don't want the government in business. But for some time after the war, during the readjustment necessitated by millions of men finding new jobs and thousands of enterprises being converted to peace production, it will be imperative that the Government continue financial assistance whether we like it or not."

BERNAL DWELLING HOUSE PROJECT **(Block plan on Page 26)**



THERAPY ROOM IN NEW ADDITION TO SHRINER'S HOSPITAL FOR CRIPPLED CHILDREN, SAN FRANCISCO

MURALS DEPICTING A SCENE TO APPEAL TO CHILDREN PATIENTS ARE DONE ON COLOR FUSED STRUCTURAL GLASS

HYDRO-THERAPY WING TO SHRINER'S HOSPITAL FOR CRIPPLED CHILDREN, SAN FRANCISCO

UNUSUAL GLASS TREATMENT IN A S. F. HOSPITAL

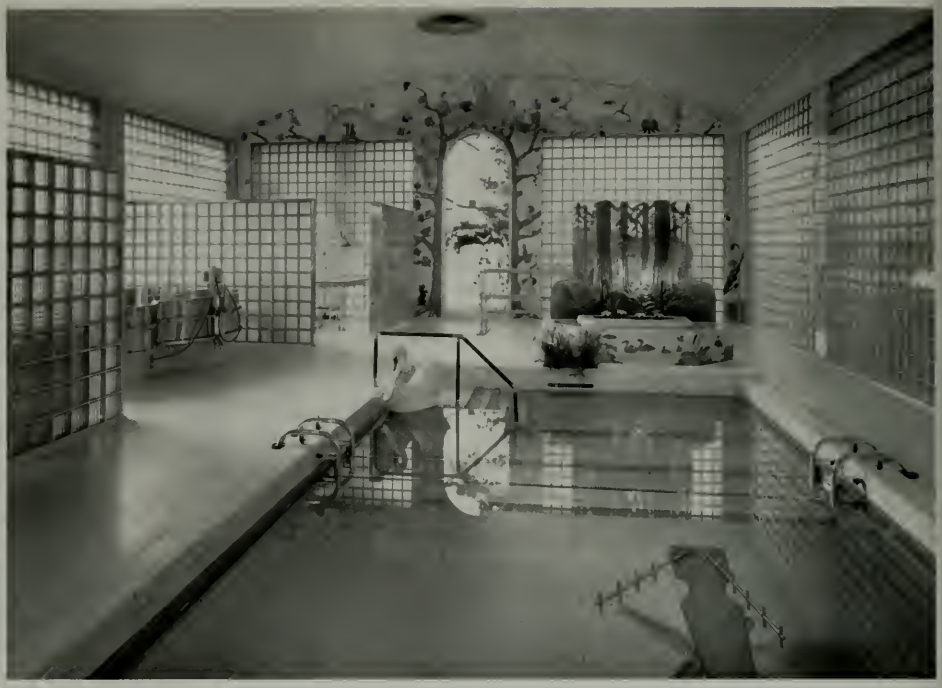
Because of its unique and attractive glass treatment, the recently completed addition to the San Francisco Shriners Hospital for crippled children has been awarded a Certificate of Honor in the National Glass Distributors Association Competition for the most unusual and outstanding glass job of the year.

The new building, called the hydro-therapy wing, has a steel frame with brick exterior walls and contains a swimming pool, with apparatus for lowering a patient into the pool. A stainless steel Hubbard tank, used with rushing swirling water, is part of the equipment.

Barring the large circle-top window, all exterior openings are glazed with glass blocks and the partitions are built of the same material instead of steel as originally specified. An unusual feature was the fact that all structural glass had to be fabricated complete, including the fire-fused coloring, from shop details long before the walls were erected. Extruded aluminum was used in place of steel sash in window and door openings.

The hydro-therapy room itself is magnificent in its coloring. An atmosphere of light, beauty and cheerfulness was created by the generous use of many kinds of glass. For example, the entire floor as well as the lining of the pool is of terrazzo, composed of crushed blue and white structural glass, ground and polished to a beautiful finish. All walls and pilasters are covered with blue color fused structural glass.

The concave bent reveals at the four window heads are 24″ wide and fit to a very narrow aluminum glazing bead on one edge and to the polished edges of the mural at the other edge, with no tolerance for errors. Murals depict a scene to appeal to the average age



GLASS BLOCKS FOR WALL CONSTRUCTION WERE CHOSEN LARGELY BECAUSE ONLY DAYLIGHT WILL PENETRATE THEM AND THE PATIENTS ARE PROTECTED FROM DUST, DIRT AND MOISTURE

of the children in this hospital which is approximately 6 years.

The base of the fountain is also done in color-fused structural glass and the back panel is of plastic supported by 3/4" thick plate glass, not visible since it was cut to conform to the outline of the sculptured redwood forest.

The curved top window is six feet wide and twelve feet high of 1/2" thick plate glass, upon which is deeply carved life size figures in keeping with the other decorative features. It is edge-lighted for night effect.

The spastic room, shower and toilet room adjoining are wainscoted with Princess Blue structural glass. The shower door plate is sandblasted for obscurity, with a marine view superimposed thereon.

According to executives of the hospital glass blocks were chosen largely because "only daylight will penetrate them" and the patients are protected from dust, dirt and moisture. Being non-transparent the patients are assured all possible privacy. The blocks are fireproof, do not support combustion and are designed to distribute daylight efficiency as well as reduce noise transmission.

The Structural Glass Company of San Francisco was in complete charge of the improvement while all of the art work on the walls and plate glass was executed by the Tempra Glass Products Company of Berkeley.

Shriner's Hospital for Crippled Children is one of the best known institutions of its kind in the world, not only for the fine results it has achieved with crippled children but because one of its supporters is the now traditional East-West football game played annually in San Francisco on New Year's day.

MORE WAR HOUSING PROJECTS

With the appointment by National Housing Administrator John B. Blandford, Jr., of Eugene Weston, architect of Los Angeles, to the position of Regional Director, the task of formulating plans for war housing projects in California, Arizona, Nevada and Hawaii has started in earnest. Announcement of several large projects in the San Francisco Bay region will be made shortly, according to official information. Plans embrace a building program that will provide some 60,000 additional war housing units, including a huge "war apartments" structure in Alameda.

As has been heretofore announced the National Housing Agency, with John B. Blandford, Jr., as administrator, is now solely responsible for the production of war housing to keep pace with the production of war materials. For soldiers, shipbuilders, sailors, aircraft workers, tank builders, gunmakers, and all the other war workers, NHA must provide decent homes. It must ascertain where housing is needed to prevent a shortage of labor in war industries and to maintain the morale of workers and their families. It must investigate how much housing is needed, what size homes, and at what rentals. It must ascertain whether private builders are able to build it or whether it must be turned over to a public agency for construction.

FPHA FOR PUBLIC HOUSING

Within the National Housing Agency are three units. The Federal Housing Administration stimulates private builders to build war housing. The Federal Home Loan Bank Administration encourages its member banks, as well as savings and loan associations and other thrift and home-financing institutions, to participate in the development of homes for war workers. The Federal Public Housing Authority uses Federal funds to construct public housing for war workers and their families, utilizing the facilities of local housing authorities to the fullest extent possible.

The Federal Public Housing Authority, headed by Herbert Emmerich as Commissioner, has assumed the housing functions, powers, and duties of the following agencies:

United States Housing Authority.
Defense Homes Corporation.
Farm Security Administration (except farm housing).
Division of Defense Housing and Mutual Ownership Defense Housing Division of the Federal Works Agency.
Public Buildings Administration.
War and Navy Departments (except on Army and Navy reservations).

FPHA is now responsible for all war housing constructed with public funds, other than housing located on Army or Navy reservations, posts, or bases. It is also responsible for all nonfarm public housing for low-income families, and the rural housing program for low-income families developed by the United States Housing Authority.

Included in the FPHA war housing program are several different kinds of housing needs.

STOPGAP SHELTER

First, stopgap shelter. This is a program providing homes that are needed for only a short period or until more permanent housing can be built. Temporary shelter is provided mainly by trailers. Regular commercially produced trailers are located in numbers of 25, 50, 100, or more in trailer parks, which are in themselves well laid-out communities. They have streets and street lighting, electric and gas connections, garbage stations, central sanitary units containing toilets, lavatories, showers, and laundries.

The trailers are either regular size, 8 by 22 feet, for four persons, or larger six-person expansible units which with their folding wings spread out to 2,569 cubic feet of living space —as much as a small house. Both units have gas stoves, refrigerators, water tanks, wardrobe lockers, and studio couches which open into double beds. The regular size costs $945 and rents for $6 to $7 a week; expansible units cost an average of $1,600. While parked, the trailers rest on jacks, so that the tires can be sent back to the factory to be used again on the next group of trailers.

TEMPORARY HOUSES

Second, temporary housing. This is flexible,

portable shelter which can be erected in one place, and, if at a later date it is no longer needed there, can be taken down, transported, and re-erected elsewhere. It is intended for use in outlying remote areas where there is some doubt that a need for housing will continue after the war. Demountable houses protect a community from the slums which develop from houses which remain long after the need for them has passed. Demountables are not to be used in the hundreds of towns and cities where there was a shortage of decent housing at reasonable rents before the war, and where there will most likely be a similar shortage after the war.

Demountables are constructed either by factory fabrication or by site fabrication. Whether made in a distant factory or on the site where they are erected, these houses consist of panels or sections joined by bolts, double-headed nails, wall studs, or locks. They are as durable as houses permanently anchored to the ground and look much like them. Inside they have living rooms, completely equipped kitchens and bathrooms, all utilities, and 1, 2, or 3 bedrooms.

Demountable dormitories have been built for workers without families. They shelter about 60 persons for about $3.50 to $5 per person per week in double rooms and $5 to $7 in single rooms. Bed linen is furnished twice weekly and clean towels daily. In addition to furnished bedrooms, the buildings contain toilet and shower rooms, lounge rooms, and a heating plant. An average dormitory for about 60 persons costs $20,000.

DURATION DORMITORIES

"Duration dormitories," temporary in structure but providing the accommodations essential to the health and welfare of war workers, are now being developed by the Federal Public Housing Authority as part of its war housing program.

These new self-contained dormitories, one of which is to be built in Alameda, are planned for a two-fold purpose—(1) to promote the worker's productive efficiency and increase the output of war industry plants, and (2) reduce the use of critical war materials to a minimum and provide a solution to the growing transportation shortage resulting from the restrictions on tires, gasoline and automobiles.

Essentials for the comfort and efficiency of the workers to be provided in these dormitories include:

1. Proper food to maintain physical and mental capacity.
2. Quiet sleeping rooms for complete rest.
3. Medical examination and care.
4. Healthful recreational activities.

The sleeping rooms of the dormitories are designed for restful quiet. They are separated from all other activities.

Designed particularly for round-the-clock, three-shifts-a-day plant schedules, these rooms are planned with a view to avoid all disturbing noises.

Special effort is being made by FPHA planners to make ceilings, walls and floor coverings muffle noise. Space is cut to a minimum through careful placing of the few essential pieces of furniture for these rooms which are used only for sleeping.

Each dormitory is composed of from two to four sleeping wings, with a sanitary center with lavatories and showers. In the basement of the sanitary unit will be located the central heating system for the dormitory. Short passageways connect the sleeping wings with the other parts of the dormitory.

Dining facilities are provided in one hall for the entire dormitory block. Like the rest of the dormitory, the dining facilities are adapted to the 24-hour-a-day operation of the plants, with breakfasts for workers going on shift and dinners for those finishing their shifts.

The principal recreational facilities are located in a central building. This area will provide:

1. A lounge.
2. Library and writing room.
3. Indoor games room.
4. Combination gymnasium-auditorium for multiple community use.

Each dormitory will also have an infirmary.

In addition to these essential facilities others may be provided, such as a soda fountain-canteen and the like. Ample space, isolated from the dormitory, will be provided for outdoor games.

The designs of these dormitories will be gov-

A. I. A. CONVENTION IN DETROIT

Architects who are "war casualties" should be put to work planning post-war construction, was the concensus of opinion of the delegates to the 74th annual meeting of the American Institute of Architects at Detroit last month. It was conceded that a large number of architects cannot be absorbed in the war effort and to employ them as planners "will involve no detraction from the prosecution of the war and no consumption of critical materials."

Bombs have taught the British public the need of planned reconstruction, because it is "easy to appreciate the desirability of rebuilding a devastated area better than it was before." The United States has plenty of devastated areas without having been bombed.

"We need planning now so as to assure better building when peace comes. We need it so as to absorb much of the shock which the end of the war effort will bring. We need it to show ourselves and the rest of the world that we really do intend to make it a better place to live in. This is a job for architects and they of all people should take the lead in advocating planning now."

The Committee on Architectural Services, of which Frederick J. Woodbridge of New York is chairman, reported to the convention that the "impact of the war on building has made a major casualty of the profession of architecture."

The report emphasizes that the cost of planning for post-war construction will be "insignificant compared to our other war expenditures and it will be just about the only investment sure to yield a handsome return in the future."

The report urges the Board of Directors of the Institute to instruct a group of architects to explain to appropriate authorities of the government the real functions of the architect. The group also should "take whatever further

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erned largely by the terrain of the sites. On level sites, a T-shaped three-wing type can be used. On sloping sites, a two-wing type is more adaptable.

PERMANENT HOMES

Third, permanent homes. These are solidly built houses located in areas where the need for additional housing will continue after the war. Constructed in accordance with rigid standards, which ensure the inclusion of all required amenities, they make up well-planned, attractive communities which are a credit to any town. Schools and recreation areas, streets, sewers, garbage removal and other municipal services are provided by the city, in return for the payments in lieu of taxes which are made on the project. They are planned in keeping with local traditions, and most often by local housing authorities themselves. Rents for industrial war workers range from $25 to $40 a month without utility payments; rents for enlisted personnel are set by Army and Navy Departments at from $11 to $26 a month.

Various uses are intended for the permanent houses after the war. Many, previously planned and constructed, will become part of the public low-rent housing program providing decent homes for low-income families now forced to live in the slums. These include the regular low-rent homes converted to occupancy by war workers for the duration and the homes built under Public Law 671.

In the most recent amendments to the Lanham Act, Congress has expressly prohibited the use of homes built under that Act for "persons of low income," and has provided that they "be sold and disposed of as expeditiously as possible."

So far, a few Lanham-Act homes have been assigned to mutual home ownership companies for cooperative ownership and management along the lines of mutual insurance plans successfully operating in Europe. While paying full taxes to the city, they nevertheless offer the worker an opportunity to buy an equity in his home without a down payment.

steps may be necessary to overcome the appalling misconceptions now existing in this regard."

The report also recommends that architects executing work under war conditions and under Government contract be requested to submit a digest of their experiences in "candid and dispassionate reports."

A staggering army of witnesses testifies to the complete misconception of the function of the architect held by those in authority over the prosecution of the war, the report says. Architects, schooled in the importance of good plans, sound structure, and efficient functioning, have to call themselves site planners, construction engineers, or planning engineers to be considered in the emergency, it asserts.

"Planning has not been part of an engineer's training but it is the most fundamental part of the architect's," the report continues. "Engineers are needed to see that buildings stand up, that mechanical equipment works and for many other essentials, but architects are needed to plan. The architects' function as planners is often usurped by others who have invented a new terminology."

SUBSTITUTES FOR CRITICAL MATERIALS

The vast research facilities of the nation's manufacturers are working overtime to create substitutes for the critical materials needed in the war effort, Albert B. Tibbets of New York declared before a joint meeting of the Institute and Producers' Council.

"The government program for the conservation of vital materials is a challenge to the designer primarily, but also to the contractor and manufacturer," according to Mr. Tibbets, who spoke before a symposium on "The Architectural Profession Today." "On every hand there is an urge to develop and create, in many cases actuated by the stern necessity for survival, but nevertheless making its contribution to conservation and hence to the war effort.

"As an illustration, construction is compelled to do almost entirely without copper. It is amazing what you can do when you have to do it. Even in so essential a use for copper as the transmission of electric current, marked progress has been made in reducing the quantities required. Valves are now available commercially which employ copper only in the valve seat and stem. Substitutes are being used for copper flashing and numerous other items.

"The shortage of steel has spurred the development of masonry and timber for structural purposes but under more efficient and economical techniques. The picture is still changing as new demands for our military effort force more and more products onto the scarce list."

The most unfortunate phase of the present situation in the huge construction industry, Mr. Tibbets said, is that there is so much good architectural talent going begging. "Apparently this situation will get worse before it gets better," he added. "War construction is almost certain to taper out next year and those architectural offices which are going at breakneck speed will find themselves in the same position that others are in now—nothing to go on the boards."

CANADIAN ARCHITECTS EXEMPT

Recognizing the architect's place in the war effort, the Canadian government has exempted architectural students from the draft, for home defense, according to Professor Milton S. Osborne, head of the department of architecture at the University of Manitoba.

"Students of architecture are encouraged in every way possible to proceed with their training," Professor Osborne said. "The schools are recognized training grounds for certain professions necessary not only to the war effort but in the reconstruction work to follow the war. This work must either be done in these recognized training centers or the government must set up the necessary schools to do this work.

"Staffs of architectural schools are not permitted to accept positions in war industries without the approval of the National Bureau of Technical Personnel, a government agency whose job it is to weigh the need of the various services and industries and allocate technical personnel to that service where the need is greatest.

"Technical service may almost be said to be 'frozen' in that a technically trained man cannot change his position without adequate proof that his services are essential elsewhere. This came about as an answer to the tendency to shop for men and to induce them to change

position through promise of more money or better opportunities.

"The government is making it possible for students who find it necessary to leave their course, to resume their training at the end of the war, by providing tuition and living expenses in all of the Canadian universities. This will act as an incentive to the students to offer their services to their country, knowing that they will have the opportunity to complete their training later on.

"There are about 20 per cent in the entire profession of architecture in the armed services at the present time."

HISTORICAL BUILDINGS PHOTOGRAPHED

More than 7,500 historic American buildings have been photographed and recorded by the Historic American Building Survey, it was reported to the convention by Dr. Leicester B. Holland, chairman of the Institute's Committee on Preservation of Historic Buildings.

"In New Jersey, 600 structures have been recorded, comprising nearly everything of real importance in that state," Dr. Holland says. "Elsewhere the coverage is far less adequate. At present there are cards on file for 3,000 unrecorded structures which it would be desirable to survey."

Photographs of 6,389 of the structures are assembled in a new catalog issued by the Superintendent of Documents, Government Printing Office.

The Survey's measured drawings and photographic negatives have been sent away from Washington for protection.

TO SPEED UP CIVILIAN DEFENSE

An immediate speed-up of preparations for civilian defense against bombing attacks because "we may reasonably expect some desperate raids on morale within a period of months, or even of weeks," was urged in a report of the Committee on Civilian Protection.

The report by Horace W. Peaslee of Washington, D. C., chairman of the committee, said that "surveys of possible safety zones have been dragging along for months," or have been only projected in many localities. Prompt action was urged in camouflaging industrial plants. If bombs were to fall in United States this year, the report stated, there would be no time to accomplish anything in this direction even if the work began immediately.

"In California, the Army has trained perhaps three or four score architects in camouflage and has put them to work," the report said. "In the East, training has been limited to the Engineers Corps and to civilian personnel identified with engineer districts whose interest is in camouflage for military objectives."

Hervey P. Clark of San Francisco is a member of the committee.

URGE MOBILIZATION OF BUILDING GROUPS

Immediate mobilization of all component groups of the building industry for the conversion of the United States to a peacetime economy after the war was urged in a report of the Committee on Post-War Reconstruction.

"We are living through a political, economic and social revolution, and to think of post-war reconstruction as a continuation of pre-war or pre-depression methods will not suffice," says the committee, of which Dean Walter R. MacCornack of the school of architecture of the Massachusetts Institute of Technology is chairman. "Unless constructive and definite plans are made now for the period following this war, there will be unemployment and chaos in the building industry with the result that hastily devised public and private works programs, not based on sound principles, will be advocated and carried out.

"To profit best by the building needs which will be required after the war, architects and other groups in the building industry, including engineers, regional planners, producers, builders, labor, banking institutions, insurance companies, private investors, all types of owners, and government agencies subsidizing construction, should plan ahead by making an immediate and intelligent examination of all the factors involved, with a view to effective action.

"These groups should create an organization pledged to subordinate selfish interests for the common good; they must be free from the government but co-operate with it; they must support sound legislation and oppose unsound legislation.

"This would not be a planning body but an organized public opinion, co-ordinating sound ideas into a practical long-range program, encouraging the formation of state and regional planning boards properly financed and equipped with well-trained personnel. The organization must be interested in extending private industry to the maximum, and in supporting government subsidy where necessary to abolish living conditions which are a menace to our form of government.

"Its interest should be restricted to problems common to all sections of the nation, and to legislation in Congress dealing with national problems. Through this group every community in the nation should be organized on the same general plan, but according to local needs, and the responsibility for action should be the duty of these local groups.

"The guiding principle of this work should be research, based on the scientific approach which seeks to find the facts and acts on the results of research. Such research should not be done by government nor by those motivated by selfish interests. Research being done in the field of aeronautics is a case in point where independence of action is based on the facts as they are revealed. Such a program should be initiated now and augmented as the war effort comes to an end. There is available ample technical skill to start it. All of the manpower of the profession of architecture might be mobilized to develop it."

HENRY H. GUTTERSON REGIONAL DIRECTOR

Richmond H. Shreve of New York was re-elected president of the Institute and Dean Walter R. MacCornack of the School of Architecture of the Massachusetts Institute of Technology was again named vice-president. Charles T. Ingham of Pittsburgh continues as secretary.

Raymond J. Ashton of Salt Lake City was chosen treasurer to succeed John R. Fugard of Chicago. New regional directors of the Institute are as follows: John F. Staub of Houston, Tex., Gulf States District; Kenneth E. Wischmeyer of St. Louis, Mo., Central States District; Henry H. Gutterson of San Francisco, Calif., Sierra-Nevada District; Albert Simons of Charleston, S.C., South Atlantic District.

A gain in membership of 9.1 per cent in the last eight months was reported. Present membership of the national society, which includes seventy-two local chapters, is 3,432. Every region showed an advance, according to Joe E. Smay of the University of Oklahoma, chairman of the committee on membership.

"The real need of the Institute is to enroll all qualified practitioners of architecture in it," the report says. "When that is done, and it has not been done heretofore, a program can be attempted for all architects. Such a program cannot be accomplished with less than one-fourth of the practitioners participating."

PROSPERITY AHEAD, PREDICTED BY KAHN

Despite the huge volume of wartime construction, great activity in industrial building will continue during the postwar period, Albert Kahn, noted industrial architect of Detroit, predicted in an address at the annual dinner of the Institute which marked the closing days of the convention.

Accepting a special medal awarded to him by the Institute in recognition of his contributions to the war effort, Mr. Kahn declared that, following an interval of readjustment after victory has been won, the United States will experience the greatest prosperity in its history.

TEN MEMBERS ADVANCED TO FELLOWSHIP

Elizabeth Werlein of New Orleans and Donald McNeal of New York were elected honorary members and William H. Ansell of London, president of the Royal Institute of British Architects, was chosen honorary corresponding member.

Ten members of the Institute were advanced to fellowships. They are: David Adler, Chicago; William Hamblin Crowell, Portland, Ore.; Ralph Carlin Flewelling, Los Angeles; Louis J. Gill, San Diego, Calif.; Arthur Berthong Heaton, Washington, D. C.; Electus Darwin Litchfield, New York City; Robert Hall Orr, Los Angeles; George Bigelow Rogers, Mobile, Ala.; John F. Staub, Houston, Tex.; Lawrence Wolfe, Pittsburgh, Pa.

Mrs. Werlein was cited for her work in the preservation of Vieux Carre, French quarter of New Orleans. Mr. McNeal was honored for his contributions to the field of rehabilitation architecture.

UNIVERSITIES OFFER NEW COURSES IN "LIGHT CONSTRUCTION ENGINEERING"

By ARTHUR A. HOOD

For the first time in history, certain of the nation's leading universities have decided that the Building Industry, which about equaled Agriculture in total volume until stifled by war regulations, has equivalent needs for formal and specialized education. The nine universities listed have established four year curricula leading to Bachelor of Science or other Degrees in Light Construction Engineering and Marketing and will be ready to receive students this fall. This paper is an attempt to give vocational counsel to any student who might consider training for a career in the field of Housing and Small Construction by matriculating in one of these specialized courses.

The construction or shelter industry embraces the second largest segment of American life—with 27.8% of the consumers' expenditures while the largest — that of agriculture and food groups, consumes 28.3% of the consumers' dollar.

The building industry is in reality two industries—heavy construction and light construction.

Heavy construction may be segregated as including roads, bridges, railroads, canals, factories, public buildings, etc., which requires heavy construction machinery for erection. In dollar value such projects run from $20,000 up to hundreds of millions of dollars on a single contract.

The small construction industry, on the other hand, embraces home, farm buildings, garages, small industrial buildings of all kinds and the general field of structural repair, remodeling and improvement. The dollars and cents value of contracts in this division of the industry runs from $1.00 to $20,000, and the largest single item is, of course, the American home.

In a normal year this housing field or, to use the other name, the light construction industry, is equal to heavy construction in dollar volume as each division is about 50% of the total construction volume.

This paper will be concerned with the field of housing and light construction which, in itself, constitutes an enormous and vital segment of our economic life.

Toward the end of their senior year in our high schools or other preparatory schools, the young men or women about to graduate face the decisions—first, whether or not to go to college; and second, "What course should I study in college?"

It would seem to be very wise procedure for any high school senior to analyze the industrial career for which he is planning to fit himself.

Since the earliest dawn of human history housing has ranked with food and clothing as the three basic essentials of human life.

Not only has man sought housing for himself and his family but he has sought to house and protect everything of value that he owns.

Today the demand for adequate housing is instinctive and universal. Every woman wants her own home. Every farmer wants satisfactory housing for his livestock, machinery and produce as well as for the farm family. Every clergyman wants a church as a background for his self-expression. Every dentist wants his own perfectly equipped office; every actor a theater in which to give expression to his talents. Every industrialist wants housing for his industry. Beyond this everyone who **owns** a home or other shelter property is anxious to improve his shelter and environment.

Housing is historically a universal necessity—

Editor's Note—This article was prepared for Architect and Engineer by Arthur A. Hood, who has been director of dealer sales and management training activities for the Johns-Manville Company for the past ten years. The paper is designed to be used as background material for talks to High School and Junior College students and as a pamphlet to place in the hands of qualified young men and women.

the backdrop before which we play out our cultural and economic lives.

HOUSING OPPORTUNITIES ARE UNLIMITED!

Many industries meet the first criterion of a universal demand. Salt, for example, is needed by everyone, but certainly the salt industry provides a quite restricted opportunity. Food, too, is an enormous and vital necessity, enjoying a universal demand, but is limited to the size of the American stomach which is currently about ninety million tons big.

The expansion of housing, however, has no known limitations from an industrial viewpoint. The homes of the average family of today have comforts, conveniences and luxuries that did not exist in the palaces of yesterday. In century after century of the progress of the human race this has proved true. Housing has paced the development of the human mind and as yet it is evident that we have but scratched the surface of the mental abilities of man.

The economic reason why housing has unlimited potentialities is because it is a wealth-creating and estate-building undertaking. When a family builds a home they have not spent their money in the ordinary sense but have simply changed the form of their wealth. Most of the wealth of the world is in real property.

The **measurable** opportunity in housing and the light construction industries is in itself so huge as to be almost unlimited. Eighteen million families in America do not own their own homes. The farms of America have but one-fourth of the needed buildings for adequate shelter of livestock, machinery, produce and equipment. There are sixty million buildings of all kinds in the country and these are wearing out at the rate of 2% per year. This repair and maintenance field, without even considering the structural improvement possibilities, presents a tremendous potential. The existing buildings on our farms, too, are generally in a deplorable state of repair.

The average American home contains 30,000 parts which come from eighty-eight separate industries, such as lumber, cement, gypsum, asbestos, glass, painting, plumbing, heating, electrical, etc.

The industry offers 600 packages made up of construction labor and materials and thirty of these packages sell for $500 or more to the consumer.

Not only in the structural areas of homes and other buildings, but in the operating and cultural areas as well, there are no known limitations to the opportunity for expansion and refinement.

NOT MUCH COMPETITION

Until this year, in the entire history of the housing industry there has never been available to the young men and women an adequate training for a career in this field. This means that the only trained people in the industry are those who acquired their training in the school of experience instead of through a scientific college curriculum. This school-of-experience training is obviously incomplete and inefficient. Therefore the young man or woman who successfully completes college training in a curriculum specifically designed for this field has no competition today and those who follow tomorrow will have only the competition of today's students who precede them up the ladder of success.

It will be a couple of decades if not a generation before our colleges and universities begin to adequately supply the need for college trained people in the housing and light construction industries.

It is estimated that more than 100,000 men and women, who are not available today, because of lack of training, are needed right now for peace time careers in housing and light construction. This need will continuously grow with the advent of peace after this war.

The most important available opportunity is in the field of consumer service—trained men and women who have the ability and capacity to fit a family into the right housing environment in terms of architecture, construction, materials, finance and responsibility — these are the retail people in the industry. There never has been enough trained help in this field.

In addition to the problem of distributing the products of the building industry, there are an infinite number of opportunities for

properly trained college graduates in the field of building material manufacturing, wholesaling, contracting, real estate, building and loan, architecture, research, plumbing, heating, electrical, public utilities, etc., etc.

The industry is almost completely unorganized from a distribution viewpoint and it is very ineffectually organized from a package production basis.

All branches of the industry need trained man and woman-power.

Thousands of retailers in the building industry are organizing to provide temporary work for college students training themselves for building industry careers as well as permanent jobs for them upon graduation.

Facilities will be added for vacation work, for part time work during the day or week, and for alternating periods of work and study. Thus the student who requires financial assistance in securing his college degree will be given help and even those who do not need such financial assistance will have an opportunity to get practical experience and a periodical application of their book learning while going through college.

These alternating periods of study and practical application will speed the process of education and step up the earning capacity of the graduate.

An independent survey by a group of university executives established the point just prior to the present world war that the thousands of retailers in the building industry were ready to employ two or three men each at salaries beginning at $125.00 per month, if graduates could present evidence of having completed a four-year college training course designed for the light construction industry. This shortage will be aggravated and the need will be greater with the coming of peace.

When it is realized that one out of four workers outside the professions will eventually find employment in some tangent of the building industry and that heretofore there has never been any formal training specifically pointed at executive and proprietorship positions in the industry, two developments seem highly probable:

(a) The housing course graduate will, because of his training, rapidly rise to a junior executive position. The rapidity of his further promotion in a wide open field will depend on his demonstrated executive capacity.

(b) If the graduate shows capacity for saving money or acquiring a credit background it will not be too difficult eventually for him to set up a retail business of his own in some branch of the industry.

Industry knowledge, merchandising sense and executive ability are more needed than capital in building a successful proprietorship and even in small towns today proprietors trained in the school of experience are enjoying profit incomes from eight to fifteen thousand dollars a year.

Because **today's** business is largely self-generated and the annual **creative** potential is at least double the existing volume, there is room for hundreds of additional light construction industry proprietorships without competitive harm to existing establishments.

In fact, the tendency will be to put the entire industry on a merchandising basis, with all capable proprietors enjoying increased volume and profits.

OPPORTUNITIES FOR CULTURAL STUDY

The home is, and will continue to be, the very center of cultural life as long as the family unit exists.

The home provides the frame work for a full expression of the artistic self. Every color of the spectrum is found in housing decoration. The housing graduate becomes an architect and sculptor of environment.

Every form of art finds its most intimate and gracious background in the home, and those who seek careers in the housing industry are continuously exposed to what is newest and finest in our culture.

The student who seeks tangible rewards for his efforts in the arts will find that home, industrial, and institutional structures provide a profitable market for his talents.

The home is the shrine of civilization.

Outside of the professional fields of pathology and religion, no other like work can contribute as much to the betterment of the human

race as the fitting of families into beautiful and comfortable homes, with well kept gardens, of their very own.

The establishment of universal home ownership is the surest preventive of crime and criminality.

Our fifteen billion dollar annual crime bill is largely caused by criminals with a youthful background of drab, dirty, sub-standard homes. Eliminate these and you materially lessen crime. Proper environment for youth and proper housing are inseparable.

Home ownership is the bulwark of democracy. A family that owns its own house and garden is seldom addicted to "isms." A home-owning nation is a stable nation.

The building industry worker who provides, sells and delivers better homes to the public occupies the highest level to which commercial pursuits can aspire. The careerist who sets forth to earn an ever growing livelihood and achievement in the building industry is certain of satisfactions that go beyond the successes and profits in the ordinary business. The public's attitude toward home ownership has probably never been better expressed than by the letter of an American woman on the subject of "What the word 'home' means to me." This is the letter:

> "Being a housewife, my Social Security number is not recorded in Washington, BUT I HAVE ONE. It is the number on the front door of my very own home. That is what HOME means to me—SECURITY. When one buys a home, he plants his roots deeply and that blessed feeling of solidity is well worth the sacrifice it may cost.
>
> "My home is as a fortress, defying the forces of inflations and deflations, depressions and recessions. True, the market value is affected but the HOME value is always 100 cents on the dollar, with a generous dividend of security."

WHICH UNIVERSITY?

Obviously, because of personnel and other reasons, the student alone can answer this question, but if he will write the various schools listed he will receive full information concerning their individual curricula.

Slight differences will be found in the curricula of the various schools because an adequate curriculum was found to cut across most of the departments of a university—it required some engineering, some architecture, some agriculture, some liberal arts subjects, some forestry, some business courses, etc.

It was necessary to fix the responsibility of administration in one department and this developed a natural tendency to emphasize that department's courses.

So far three university departments have been assigned the responsibility—Engineering, Commerce or Business Administration and Forestry.

Where the Forestry department administers the course there will be slight emphasis on lumber techniques; where Engineering has the responsibility the course will run a little heavy to construction technique and where the School of Commerce directs, it's marketing and kindred subjects that will have certain emphasis.

But all nine universities have excellent coverage of the problem in their curricula and the student desiring this training may matriculate at any of the colleges listed, without hesitancy.

LIST OF UNIVERSITIES AND THE MEN TO ADDRESS CONCERNING LIGHT CONSTRUCTION ENGINEERING AND MARKETING COURSES—

Iowa State College, Ames, Iowa—Prof. Geo. B. MacDonald.

University of Denver, Denver, Colorado—Prof. John T. Lynch.

Michigan State College, Lansing, Mich.—Prof. Wm. J. Baker.

North Carolina State College, Raleigh, N. C.—Dean B. R. Van Leer.

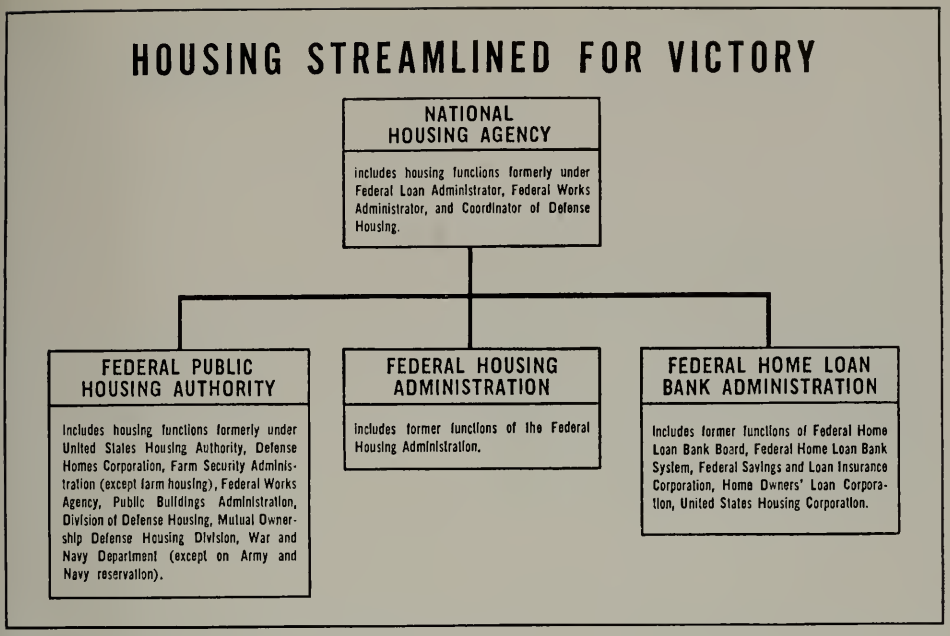
Massachusetts Institute of Technology, Cambridge, Mass.—Prof. Walter C. Voss.

Alabama Polytechnic Institute, Auburn, Alabama—Asst. Dean J. E. Hannun.

University of Minnesota, Minneapolis, Minn.—Dr. Henry Schmitz.

New York State College of Forestry at Syracuse University, Syracuse, N. Y.—Dean Samuel N. Spring.

University of Wisconsin, Madison, Wisconsin—President Clarence Dykstra.


HOUSING STREAMLINED FOR VICTORY
NATIONAL HOUSING AGENCY
includes housing functions formerly under Federal Loan Administrator, Federal Works Administrator, and Coordinator of Defense Housing.
FEDERAL PUBLIC HOUSING AUTHORITY
Includes housing functions formerly under United States Housing Authority, Defense Homes Corporation, Farm Security Administration (except farm housing), Federal Works Agency, Public Buildings Administration, Division of Defense Housing, Mutual Ownership Defense Housing Division, War and Navy Department (except on Army and Navy reservation).
FEDERAL HOUSING ADMINISTRATION
includes former functions of the Federal Housing Administration.
FEDERAL HOME LOAN BANK ADMINISTRATION
Includes former functions of Federal Home Loan Bank Board, Federal Home Loan Bank System, Federal Savings and Loan Insurance Corporation, Home Owners' Loan Corporation, United States Housing Corporation.

ILLUSTRATING PRESENT SET-UP OF NATIONAL HOUSING ADMINISTRATION (Page 35)

PROGRESS CHART

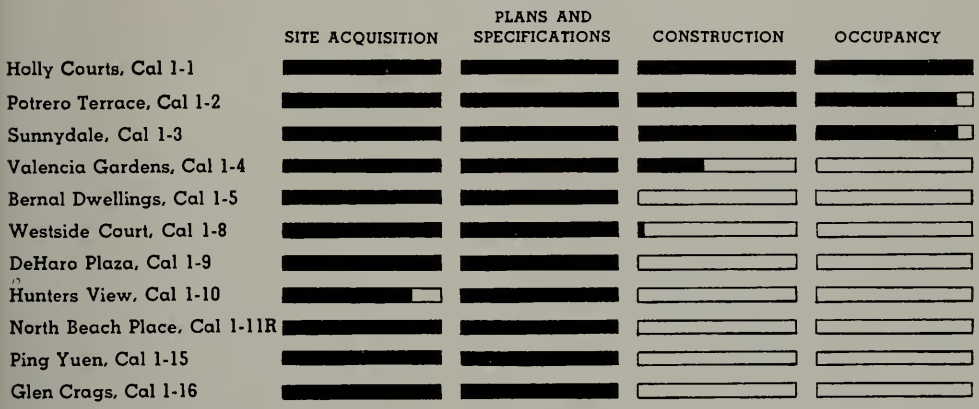


CHART SHOWS PROGRESS TO DATE OF SAN FRANCISCO CITY AND COUNTY HOUSING PROJECTS

AIDS "ALL OUT" WAR WORK

Speed in production and speed in construction are the keynotes of our "all out" war effort. Throughout the country airplane plants, factories, factory additions, and military establishments are being built in great numbers.

In practically all of this construction concrete is playing an important part. For best results, concrete needs to be cured—yet a good cure requires time. For years contractors have found that by using a sisal fibre reinforced paper for curing and protecting, there is no need to halt construction during the curing process.

SISAL paper used to cure and protect concrete floor at United Airlines Terminal

Low in cost, sisal fibre reinforced paper comes in rolls 3, 4, 5, 6, 7 and 13½ feet wide, as well as in special blankets of various sizes. This answers the need for quick, simple, economical application. Because of its reinforcing qualities the paper is strong and tough enough to protect the slab against debris and the traffic of workmen during the curing period, and will continue to protect the finish until ready for inspection.

Many West Coast contractors are familiar with sisal fibre reinforced curing paper and have used it with success. Illustrated is the new United Airlines Terminal at San Francisco Airport. Over 120,000 square feet of paper were used to cure and protect the concrete. More than 300,000 square feet of the same paper has been used in the new Union Square Garage to be featured in this magazine soon.

Construction of sisal papers continues all during the curing period. As soon as a section of slab takes its initial set, it is covered with the paper and construction continues. Note how paper protects against debris and permits traffic—as shown in the photograph.

NO FLYING GLASS IN AIR RAIDS

After losing millions of panes of glass in air raids, Britain now knows almost everything there is to be known about keeping glass from scattering. Although nothing will prevent window glass from being broken by blast, it can be so bound together that splinters from it do not fly about and injure people either inside the bombed building or in the streets outside.

The task which the scientists of the British Government's Building Research Station set themselves was to find materials not in demand for more urgent war needs which would stick firmly to glass and remain effective for a reasonable length of time, aims which apply equally to any other country likely to suffer air attacks.

Research tests brought to light a useful range of materials. They showed two classes to be of value—transparent cellulose sheets and textile netting. Both of these, when stuck all over a glass pane, effectively prevent splinters from flying.

The cellulose sheets, however, are made from materials required for other important war needs and so their use is now restricted to a few cases where excellent transparency is necessary.

Textile netting obstructs vision rather than light but if black netting is used, vision also is quite good. The reason is that only the light that passes straight through the holes in the netting reaches the eye; light that falls on the threads is absorbed, and so the distant view is clearly seen.

Any textile fabric properly stuck on will prove serviceable, especially if it is bound to the window frames, but the plainer netting fabrics are preferable since they use up less material. To prevent mildew in the glue an antiseptic should be mixed in. Where condensation is likely to be serious it is clear that there is the risk of adhesion suffering since the adhesives used dissolve in water. In such positions the netting is best given a coating of clear varnish, preferably all over but if the condensation is only moderate, an edging of varnish will suffice.

If varnish is applied over the net it will spoil the vision even when black netting is used.

Many popular remedies have been rejected as worthless in these tests, including some of the liquid treatments and also the crosswire and pad contraption of which so many were sold in Britain to shops and stores early in the war. Strips of adhesive cloth tape or cellulose film though of less value than treatment covering the whole surface are reasonably effective if they are closely spaced; but paper strips are no use unless a really stout paper is used.

A COURSE ON SUBSTITUTE MATERIALS

Stanford University is giving a ten-weeks' course on industrial substitutes. The class meets every Wednesday night from 7 to 9 in room 237, Merchants Exchange Building, 465 Market Street, San Francisco. The first class was held on June 3. No charge is made, but those who enroll in the course must be employed in engineering design or in construction work. Professor Ray Hawksley is conducting the course, and will be assisted by experts in material production who will

WHAT UNESSENTIAL ARTICLES WILL MAKE IN ARMAMENT

When the War Production Board issued its order which will end the use of iron and steel in more than four hundred familiar civilian products the list of those products forms a fascinating catalogue of the things we use.

Arranged in alphabetic order the articles for which iron and steel may not be used after a 90-day "tapering-off" period are as workaday as office machinery and as frivolous as cocktail shakers.

Mostly they are smaller items—the smallest probably are phonograph needles—but in the aggregate there will be tremendous quantities of the metal most needed to win the war.

In total war there are no trifles. There is interesting proof of this in the fact that by eliminating manufacture of blackhead squeezers we shall save 110,000 pounds of steel. Out of this steel we might have made four 155 MM field pieces. We might have made a thousand 3-inch trench mortars, 4,400 .30 caliber machine guns, fifty-five 16-inch shells, 110 200-pound aerial bombs. And we could have made three 15-ton tanks with something left over to arm them.

In 1941 America used up 1815 tons of hard steel in making the tiny instruments used by manicurists—home or otherwise. From this steel we might have made—we are making this year—a great quantity and variety of weapons. Out of this steel which will not go to manicurists we may make more than 170 155 MM guns. More than 61 medium tanks or 44,300 .50 caliber machine guns.

Because we are not going to be making manicure scissors we will save 630,000 pounds of iron and steel —that is the steel equivalent of 19,687 four-inch shells or 162 37 MM anti-aircraft guns. We shall save, on the basis of last year's production, 1,150,000 pounds of steel because we shall make no more nail files for the duration. Out of this steel we may make forty-four 155 MM guns, 46,000 .30 caliber machine guns or 575 sixteen-inch shells.

We are saving 440,000 pounds of steel because we won't be making any more nail clippers and that steel would provide the steel for 24 4-ton army trucks or 8,800 100-pound aerial bombs. Into cuticle pushers went 300,000 pounds of steel last year and there went a potential three thousand .50 caliber machine guns. And we might have made 277 half-ton blitz buggies out of the million pounds of steel which went into tweezers.

One of the largest savings in this group and one of the most striking is the sixteen million pounds of steel which we will save because we shall not be putting iron and steel into hair pins and bobby pins. American women can reconcile themselves to sketchy hair-do's with the thought that there may be 160,000 more .50 caliber machine guns because we have stopped making hairpins.

In 1940 we put about 80,000 tons of steel into all sorts of metal signs—signs along the roadways, signs along the street. Some time ago the War Production Board began tightening up on this use of iron and steel and now such uses will end altogether. The 80,000 tons of steel thus saved is enough to provide structural steel to build four battleships or steel to build more than twenty-two hundred medium tanks.

The order which saves our steel reached into the world of sport to save about 12,500 tons of steel which had been going every year into ice skates and roller skates. There, ready at hand, is metal for more than two million hand grenades or steel to build the hulls of two heavy cruisers.

The steel which went into the furniture of barber shops and beauty shops—10,000 tons of it a year—is enough for more than 600 light tanks. Manufacture of metal waste baskets used up 1600 tons of steel a year.

Because we shall be making no more metal waste baskets—unless, it seems scarcely likely, they are made of gold or silver—we may be able to build, for instance, 29,000 3-inch trench mortars. We put 8,000 tons of steel into novelties and souvenirs when we might have been putting it into 160,000 .50 caliber machine guns. We put 400 tons of steel into marine hardware for our pleasure boats when we might have been making 400 16-inch shells.

These things we shall do no longer. We shall not, this year use 2,000 tons of steel to make photographic accessories when this amount might have made 1,200 .35 MM anti-aircraft guns. Nor shall be put into fountain pens and automatic pencils the 2,800 tons of steel which could have been 430,000 1-inch shells.

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discuss immediate uses for non-critical materials.

The course has been developed as a part of the engineering, science and management training program sponsored by the U. S. Office of Education. In these ten lectures it is planned to cover Army and Navy Munitions Board activities; the properties and limitations of such substitutes as plastics, textiles, industrial fibers, wood, concrete, glass, ceramics, rubber substitutes and many other available materials; construction standardization; conservation of steel basic designs; uses of protective finishes; and other techniques. Anyone eligible who would like to enroll in this course should immediately contact Mr. Hawksley, telephone KL 2-2300.

ARCHITECTS MOVE

Earl B. Bertz has moved from the Monadnock Bldg., San Francisco, to 165-28th Avenue, same city.

Milton Latham has moved from Carmel to the Mark Hopkins Hotel, San Francisco.

Gifford E. Sobey from San Jose to 2270 North Point Street, San Francisco.

Ernest J. Kump, Jr., from Fresno to General Delivery Boulder Creek, California.

David H. Horn's new address is Route 1, Box 409A, Fresno.

Joseph Kaiser from Los Angeles to Box No. 9, Lake Arrowhead, California.

Charles DuBois from Los Angeles to 1766 Neale Street, San Diego.

John Cooper Funk's address is Box 1027, Flagstaff, Arizona, from Berkeley.

W. Redmond Stout has moved from San Jose to c/o Quartermaster, Hawaiian Dept., Fort Shafter, Hawaii.

Walter C. Falch, architect of San Francisco, has retired from business. His new address is Healdsburg, Sonoma County.

Clarence Mayhew has moved from 30 Presidio Terrace, San Francisco to 330 Hampton Road, Piedmont.

Henry Temple Howard has moved from 279 Post Street, San Francisco, to 2944 Jackson Street, San Francisco.

ASSOCIATES WILL CARRY ON

Editor, Architect and Engineer
San Francisco, California:

It is with deep regret that we announce the death of our beloved chief, Charles William Dickey.

We, who have been associated with him, and have felt the benefit of his years of rich and varied experience, are deeply mindful of the loss sustained by all who have known him and felt the influence of his work.

Mr. Dickey expressed the wish that we "carry on," and so with earnestness and a serious purpose, we offer continued service as "C. W. Dickey Associates, Architects."

Sincerely,

WILLIAM DICKEY MERRILL
JAS. C. SUNICET
KENNETH W. ROEHIG.

Honolulu, T. H.

A RECORD FOR U. S. STEEL

An "extra dividend" of enough steel plate to build 12 large cargo ships was one of Carnegie-Illinois Steel Corporation's May contributions to America's rolling offensive in the war of production. The U. S. Steel Subsidiary in May produced 329,069 tons of steel plates for ships and other urgent war needs, a new record and greater by 41,000 tons than the same company's previous high mark established in March. In shattering its two month old record Carnegie-Illinois produced enough extra plates for a dozen vessels.

ARC WELDING

"Lessons in Practical Arc Welding" by Chaffee. 188 pages. 1942 copyright. Paper cover. Published by Hobart Trade School, Inc. 75c per copy.

This book contains the complete series of 41 arc welding lessons offered at the Hobart Trade School. Chapter headings include Preliminary Instructions; Starting & Manipulating the Arc; Welding Common joints with Bare Electrodes; Welding Light Gauge Sheets with Coated Electrodes; General Welding with Coated Electrodes in the Flat, Horizontal, Vertical, Overhead Position; Pipe Welding; Welding Cast Iron; Special Practice & Tests. Text also contains a suggested classroom procedure and ready reference index.

SUPER MARKET COMPETITION

The national competition for a super market sponsored by the Illuminating Engineers was judged by Walter Wurdeman, Stiles Clements and Sumner Spaulding, architects of Los Angeles, who represented the Pacific Coast stage of the competition. Many fine entries were received from the West Coast. The competition will be assembled and final awards presented at the annual meeting of the Institute.

PLYM FELLOWSHIP AWARDS

The twenty-ninth competition in architecture of the Francis J. Plym Fellowship, L. H. Provine, Secretary, has been awarded. Ralph E. Myers was placed first by the Committee of Award and Richard E. Drover second. The subject of the program was "An Airport for a Middle Western Industrial City of 100,000 Population."

NEW CHEMIST NAMED

The Robert W. Hunt Company, 251 Kearny Street, San Francisco, announces the appointment of Gustave D. Tollen as Pacific Coast chief chemist. Mr. Tollen comes from the Chicago laboratory and succeeds Marcel E. Juilly, resigned.

ARCHITECT'S GIFT TO COLUMBIA

More than 150 sketches and working drawings of the late Colonel F. L. V. Hoppin, architect, whose projects ranged from lavish villas in Newport to police stations and fire houses in New York City, have been given to Avery Library of Columbia University, it is announced by Talbot F. Hamlin, librarian. The New York City central police headquarters building and the Albany County Courthouse in Albany were also designed by Colonel Hoppin.

ERNEST E. WEIHE HONORED

Ernest E. Weihe, architect of San Francisco, has been appointed a member of the National Architectural Accrediting Board, by President Shreve of the A.I.A.

ARCHITECTS' BULLETIN

Issued For

THE STATE ASSOCIATION OF CALIFORNIA ARCHITECTS

Northern Section

STATE ASSOCIATION MEMBER
OF THE
AMERICAN INSTITUTE OF ARCHITECTS

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Harris C. Allen

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ARCHITECTS IN SERVICE

A partial list of our members engaged, directly or indirectly, in war activity for the Government is given below. Any information as to the activities of other members, or correction of any incorrect statement, will be welcomed by the Editor.

Wm. C. Ambrose, Federal Architects Office, Washington, D. C.; A. Appleton, Bethlehem Shipbuilding Co.; Harris C. Allen, Priorities, Defense Housing, F.H.A.; Eugene F. Barton, U. S. Navy; Norman K. Blanchard, Industrial Housing; Ernest Born, U. S. Navy; Vincent Buckley, U. S. Navy; Mario J. Ciampi, Bethlehem Shipbuilding Co.; Birge M. Clark, Kaiser Shipbuilding Co.; W. P. Day, U. S. Army Ammunition Depot, Utah; Vernon De Mars, F. S. A. Housing; Edward L. Frick, U. S. Navy; Arthur B. Gallion, Federal Public Housing Authority; Irwin B. Goldstine, U. S. Army; Carl F. Gromme, Federal Public Housing Authority; Henry H. Gutterson, Custodian Physical Properties, U. S. O.

Andrew T. Hass, Manager Construction, Marine Base, So. Cal.; Samuel F. Heiman, Captain, U. S. Army; Wayne S. Hertzka, Captain, Engineer Corps, U. S. Army; Otto G. Hintermann, U. S. Navy; Lester W. Hurd, Major, U. S. Army; Irwin M. Johnson, Federal Public Housing Authority; Conrad Kett, Federal Public Housing Authority; William H. Knowles, Bechtel Construction Co., Arizona; Edward J. Maher, U. S. Navy; Charles F. Masten, Major, U. S. Army; Frederick H. Meyer, Director Defense Transportation, San Francisco; Harry M. Michelsen, U. S. Army Ammunition Depot, Utah; Henry A. Minton, U. S. Navy.

Edward A. Nickel, Lt. Colonel, U. S. Army; Ernest L. Norberg, Colonel, Engineer Corps, U. S. Army; Charles S. Pope, Federal Public Housing Authority; Frederick H. Reimers, Federal Public Housing Authority; Malcolm D. Reynolds, Federal Public Housing Authority; Chester Root, Kaiser Shipbuilding Co.; George P. Simonds, Federal Public Housing Authority; C. Jefferson Sly, Captain, U. S. Army; Dole F. Thomson, Lieutenant, U. S. Navy; George W. Travis, U. S. Army; Harold H. Weeks, Moore Shipbuilding Co.; John D. Young, Federal Public Housing Authority.

Substitute Materials

At the War Production Clinic in the Whitcomb Hotel, San Francisco, are displayed many materials and articles for civilian consumption produced from materials substituted for the critical materials now unavailable except for military use. This clinic and exhibit are under the management of R. W. Hawksley. District offices of the Contract Branch, W.P.B. are as follows:

Oakland, Financial Center Building; Sacramento, Farmers & Mechanics Building; Fresno, 314 Mattei Building.

Stanford University is giving a 10-weeks course on substitutes from 7 to 9 p.m., every Wednesday in Room 237, Merchants Exchange Building, San Francisco. Information from Mr. Hawksley, KL. 2-2300.

Surplus material, new or second hand, may be sold through the Production Division, W.P.B. Submission of such material will be of great assistance to the war program.

Master Plan

The Citizens' Master Plan Committee, a non-profit corporation, is headed by Gardner A. Dailey, one of our public-spirited San Francisco architects, and other members are active in this organization—such as William Merchant who now doubles in brass as President of the Down Town Association.

The broad purpose of this committee is to assist the City Planning Commission in preparing a Master Plan for San Francisco. Constructive suggestions are in order, and architects are by the nature of their training in a better position to offer such suggestions than most other citizens.

Chairman Dailey urges all citizens in San Francisco to participate in the work of the Citizens' Master Plan. He brings to view the fact that efforts in city planning have been too scattered.

"We want to take all the energy now being expended by the neighborhood and improvement associations and harness it to pull for a greater San Francisco," said Mr. Dailey. "We can't do anything with our efforts divided, but if we all work toward one goal we can reach it. The time was never better than now for the Citizens' Master Plan."

Chairman Dailey went on to emphasize that the Federal government will undoubtedly have millions of dollars to spend on well-planned, useful public works projects. San Francisco will have a far better opportunity of receiving its just share if we have a well-integrated Master Plan. The Committee's membership drive is now well under way, the aim being for the first thousand members. Committees composed of interested laymen will be formed to consider various planning problems, and to make recommendations to the City Planning Commission for their solution. Although the City Planning Commission, a municipal department, is charged with the responsibility of formulating a Master Plan, San Francisco will never have a realistic and 100% useful Master Plan unless the Planning Commission is assisted in this work by the various citizens, who have so much to gain through the carefully planned development of their city.

CITIZENS' MASTER PLAN

At a meeting of the Citizens' Master Plan for San Francisco the following officers were elected: Chairman, Gardner A. Dailey; Vice-Chairman, Harley C. Stevens; Treasurer, Jerd Sullivan, Jr.; Secretary, Deborah Maxwell Levy.

Board members are: Carroll Newburgh, President of Central Council of Civic Clubs; Mrs. Clarence Cuneo, President of City and County Federation of Womens' Clubs of San Francisco; Will Merryman, Executive Vice-President of the Chamber of Commerce of San Francisco; George Wilson, President of San Francisco District Industrial Union Council; Jerd Sullivan, Jr., banker; Walter Laufenberg, San Francisco Real Estate Board; Gardner A. Dailey, architect; Robert Lilienthal, merchant; Harley C. Stevens, attorney; William Merchant, President of Downtown Association; Alexander Watchman, Building and Construction Industries; Mrs. Dorothy Erskine, San Francisco Housing and Planning Association.

Dr. Chauncey Leake and Vernon DuMars are two of the speakers who have been sent out by the Citizens' Master Plan on neighborhood coverage. Dr. Leake, from the University of California Medical School in San Francisco, has long had an active interest in City Planning. Mr. DuMars, of the Farm Security Bureau, is taking a deep interest in Citizens' Master Plan affairs, and is lending his support in appearing before club groups. The field is open to anyone who wishes to try his hand at speaking.

WITH THE CIVIL ENGINEERS

On June 16 the members of San Francisco Section, A.S.C.E., were addressed by Ernest P. Goodrich, whose subject was "Scientific Approaches to City Planning." Mr. Goodrich is presently engaged by the San Francisco Planning Commission to develop a City Plan for that city.

William C. Renshaw (now Lt. Commander in the Civil Engineer Corps, U. S. Naval Reserve), for 19 years associated with the San Francisco Water Department, has for the second time won the cup awarded annually as best speaker of the Civil Engineers Speakers' Club.

J. D. Galloway, Honorary Member A.S.C.E., Major, E.O.R.C., A.E.F., during World War I, is contributing his services toward winning World War II in the capacity of Administrator of Transportation for Berkeley.

T. M. Price is construction manager for H. J. Kaiser Company, Inc. on the new steel plant now being built by that firm at Fontana, California.

James T. Hester, for the past five years assistant engineer for Joint Highway District No. 10, which comprises San Francisco and San Mateo Counties, has been commissioned a 1st Lieutenant in the Corps of Engineers, U. S. Army.

The Board of Direction of A.S.C.E. at its meeting in New York in January 1942, adopted the following policy respecting the remission of dues of those members of the Society in military service:

"The dues of any member in the Armed Service of the United States having the rank of Captain, or lower, in the Army, or the equivalent rank in the Navy, shall be remitted, upon request of the member, for the duration of the war."

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

Estimator's Guide

Giving Cost of Building Materials, Wage Scale, Etc.

Amounts given are figuring prices and are made up from average quotations furnished by material houses to San Francisco contractors. 3% Sales Tax on all materials but not labor.

All prices and wages quoted are for San Francisco and the Bay District. There may be slight fluctuation of prices in the interior and southern part of the state. Freight cartage, at least, must be added in figuring country work.

Bond—1½% amount of contract.
Government work ¾%.

Brickwork—

Common, $40 to $45 per 1000 laid, (according to class of work).

Face, $90 to $100 per 1000 laid, (according to class of work).

Brick Steps, using pressed brick, $1.00 lin. ft.

Brick Veneer on frame buildings, $1.00 sq. ft.

Common f.o.b. cars, $15.00 at yard. Cartage extra.

Face, f.o.b. cars, $40.00 to $60.00 per 1000, carload lots.

Building Paper—

1 ply per 1000 ft. roll	$3.50
2 ply per 1000 ft. roll	5.00
3 ply per 1000 ft. roll	6.25
Sisalkraft, 500 ft. roll	5.00
Sash cord com. No. 7	$1.20 per 100 ft.
Sash cord com. No. 8	1.50 per 100 ft.
Sash cord spot No. 7	1.90 per 100 ft.
Sash cord spot No. 8	2.25 per 100 ft.

Sash weights, cast iron, $50.00 ton.
Nails, $3.50 base.
Sash weights, $45.00 per ton.

Concrete Aggregates—

GRAVEL (all sizes) $1.45 per ton at bunker; delivered to any point in S. F. County $1.85.

	Bunker	Delivered
Top sand	$1.45	$1.85
Concrete mix	1.45	1.85
Crushed rock, ¼ to ¾	1.60	2.00
Crushed rock, ¾ to 1½	1.60	2.00
Roofing gravel	1.60	2.00
City gravel	1.45	1.85
River sand	1.50	1.90

Bank sand—$1.00 per cubic yard at bunker or delivered.

SAND—	Bunker	Delivered
River sand	$1.50	$1.85
Lapis (Nos. 2 & 4)	2.00	2.40
Olympia Nos. 1 & 2	1.80	2.20
Healdsburg plaster sand	$1.80	and $2.20
Del Monte white	50c	per sack

Common cement (all brands, paper sacks) carload lots $2.52 per bbl. f.o.b. car; delivered, $2.80; less than carloads delivered, 70c per sack.
Cash discount on carload lots, 10c a barrel, 10th Prox.; cash discount less than carload lots, 2%.

Atlas White, Calaveras White, Medusa White — 1 to 100 sacks, $2.00 sack, warehouse or delivery.

Forms, Labors average $40.00 per M.
Average cost of concrete in place, exclusive of forms, 35c per cu. ft.; with forms, 60c.
4-inch concrete basement floor ..... 12½c to 14c per sq. ft.
Rat-proofing 7½c
Concrete Steps ..... $1.25 per lin. ft.

Dampproofing and Waterproofing—

Two-coat work, 20c to 30c per yard.
Membrane waterproofing—4 layers of saturated felt, $4.50 per square.
Hot coating work, $2.00 per square.
Medusa Waterproofing, 15c per lb., San Francisco Warehouse.
Tricocel waterproofing.
(See representative.)

Electric Wiring—$12.00 to $15.00 per outlet for conduit work (including switches). Knob and tube average $3.00 per outlet.

Elevators—

Prices vary according to capacity, speed and type. Consult elevator companies. Average cost of installing an automatic elevator in four-story building, $2800; direct automatic, about $2700.

Excavation—

Sand, 60 cents; clay or shale $1 per yard.
Teams, $12.00 per day.
Trucks, $22 to $27.50 per day.
Above figures are an average without water. Steam shovel work in large quantities, less; hard material, such as rock, will run considerably more.

Fire Escapes—

Ten-foot galvanized iron balcony, with stairs, $150 installed on new buildings; $160 on old buildings.

Floors—

Composition Floors—22c to 40c per sq. ft.
In large quantities, 18c per sq. ft. laid.
Mosaic Floors—80c per sq. ft.
Dureflex Floor—23c to 30c sq. ft.
Rubber Tile—50c to 75c per sq. ft.
Terazzo Floors—45c to 60c per sq. ft.
Terazzo Steps—$1.60 lin. ft.

Hardwood Flooring (delivered to building)—

	13/16x2¼" T&G	⅝x2" T&G	⅞x2" Sq.Ed.
Clr. Otd. Oak	$144.00 M	$122.00 M	$141.00 M
Sel. Otd. Oak	118.00 M	101.00 M	114.00 M
Clr. Pla. Oak	120.00 M	102.00 M	115.00 M
Sel. Pla. Oak	113.00 M	92.00 M	107.00 M
Clr. Maple	125.00 M	113.00 M	

Wage—Floor layers, $12.00.
Note—Above quotations are all board measure except last column which is sq. ft.

Glass (consult with manufacturers)—
Double strength window glass, 20c per square foot.
Plate 80c per square foot (unglazed) in place, $1.00.
Art, $1.00 up per square foot.
Wire (for skylights), 40c per sq. foot.
Obscure glass, 30c to 50c square foot.
Glass bricks, $2.50 per sq. ft. in place.
Note—if not stipulated add extra for setting.

Heating—
Average, $1.90 per sq. ft. of radiation, according to conditions.
Warm air (gravity) average $48 per register.
Forced air, average $68 per register.

Iron — Cost of ornamental iron, cast iron, etc., depends on designs.

Lumber (prices delivered to bldg. site)—

No. 1 common	$43.00 per M
No. 2 common	41.00 per M
Select O. P. common	46.00 per M
2x4 No. 3 form lumber	32.00 per M
1x4 No. 2 flooring VG	90.00 per M
1x4 No. 3 flooring VG	85.00 per M
1x6 No. 2 flooring VG	96.00 per M
1¼x4 and 6, No. 2 flooring	95.00 per M

Slash grain—

1x4 No. 2 flooring	$65.00 per M
1x4 No. 3 flooring	62.00 per M
No. 1 common run T. & G.	48.00 per M
Lath	7.50 per M

Shingles (add cartage to price quoted)—

Redwood, No. 1	$1.20 per bdle.
Redwood, No. 2	1.00 per bdle.
Red Cedar	1.45 per bdle.

Plywood—Douglas Fir (add cartage)—
"Plyscord" sheathing (unsanded)
⅜" 3-ply and 48"x96" ..... $39.75 per M
"Plywall" (wallboard grade)—
¼" 3-ply 48"x96" ..... $43.70 per M
"Plyform" (concrete form grade)—
⅝" 5-ply 48"x96" ..... $117.30 per M
Exterior Plywood Siding—
⅜" 5-ply Fir ..... $132.00 per M
Redwood (Rustic) 1"x8" clear heart.. $ 95.00 per M
$5 less per M for A grade.

Millwork—Standard.
O. P. $100 per 1000. R. W. rustic $120.00 per 1000 (delivered).
Double hung box window frames, average with trim, $6.50 and up, each.
Complete door unit, $10.00.
Screen doors, $3.50 each.
Patent screen windows, 25c a sq. ft.
Cases for kitchen pantries seven ft. high, per lineal ft., $8.00 each.
Dining room cases, $8.00 per lineal foot.
Rough and finish about 75c per sq. ft.
Labor—Rough carpentry, warehouse heavy framing (average), $17.50 per M.
For smaller work average, $35.00 to $45.00 per 1000.

Marble—(See Dealers)

Painting—

Two-coat work	per yard 50c
Three-coat work	per yard 70c
Cold water painting	per yard 10c
Whitewashing	per yard 4c

Turpentine, 65c per gal., in 5 gal. cans, and 55c per gal. in drums.
Raw Linseed Oil—95c gal. in light drums.
Boiled Linseed Oil—98c gal. in drums and $1.08 in 5 gal. cans.

White Lead in oil

	Per Lb.
1 ton lots, 100 lbs. net weight	11¾c
500 lbs. and less than 1 ton	12c
Less than 500 lb. lots	12½c

Red Lead and litharge

1 ton lots, 100 lbs. net weight	11¾c
500 lbs. and less than 1 ton	12c
Less than 500 lb. lots	12½c

Red Lead in oil

1 ton lots, 100 lbs. net weight	12¾c
500 lbs. and less than 1 ton	13c
Less than 500 lb. lots	13½c

Note—Accessibility and conditions cause some variance in costs.

Patent Chimneys—

6-inch	$1.25 lineal foot
8-inch	1.50 lineal foot
10-inch	2.25 lineal foot
12-inch	3.00 lineal foot

Plaster

Neat wall, per ton delivered in S. F. in paper bags, $17.60.

Plastering—Interior—

	Yard
1 coat, brown mortar only, wood lath	$0.50
2 coats, lime mortar hard finish, woad lath	.85
2 coats, hard wall plaster, wood lath	.72
3 coats, metal lath and plaster	1.25
Keene cement on metal lath	1.30
Ceilings with ¾ hat roll channels metal lath (lathed only)	.90
Ceilings with ¾ hot roll channels metal lath plastered	1.80
Single partition ¾ channel lath 1 side (lath only	.85
Single partition ¾ channel lath 2 inches thick plastered	$2.90
4-inch double partition ¾ channel lath 2 sides (lath only)	1.70
4-inch double partition ¾ channel lath 2 sides plastered	3.30
Thermax single partition; 1" channels; 2¼" overall partition width. Plastered both sides	2.50
Thermax double partition; 1" channels; 4¾" overall partition width. Plastered both sides	3.40
3 coats over 1" Thermax nailed to one side wood studs or joists	1.25
3 coats over 1" Thermax suspended to one side wood studs with spring sound isolation clip	1.45

Plastering—Exterior—

	Yard
2 coats cement finish, brick or concrete wall	$1.00
3 coats cement finish, No. 18 gauge wire mesh	1.75
Wood lath, $5.50 to $6.50 per 1000.	
2.5-lb. metal lath (dipped)	.19
2.5-lb. metal lath (galvanized)	.21
3.4-lb. metal lath (dipped)	.22
3.4-lb. metal lath (galvanized)	.24
¾-inch hot roll channels, $72 per ton.	
Finish plaster, $18.90 ton; in paper sacks.	
Dealer's commission, $1.00 off above quotations.	
$13.85 (rebate 10c sack).	
Lime, f.o.b. warehouse, $2.25 bbl.; cars, $2.15	
Lime, bulk (ton 2000 lbs.), $16.00 ton.	
Wall Board 5 ply, $50.00 per M.	
Hydrate Lime, $19.50 ton.	
Plasterers Wage Scale	$1.67 per hour
Lathers Wage Scale	1.60 per hour
Hod Carriers Wage Scale	1.40 per hour

Composition Stucco—$1.80 to $2.00 sq. yard (applied).

Plumbing—

From $100.00 per fixture up, according to grade, quantity and runs.

Roofing—

"Standard" tar and gravel, $7.00 per sq. for 30 sqs. or over.
Less than 30 sqs. $7.50 per sq.
Tile, $20.00 to $35.00 per square.
Redwood Shingles, $7.50 per square in place.
Copper, $16.50 to $18.00 per sq. in place.
5/2 #1-16" Cedar Shingles, 4½" Exposure ..... 8.00 Square
5/8 x 16" — #1 Cedar Shingles, 5" Exposure..... 9.00 Square
4/2 #1-24" Royal Shingles, 7½" Exposure ..... 9.50 Square
Re-coat with Gravel, $3 per sq.
Asbestos Shingles, $15 to $25 per sq. laid.
Slate, from $25.00 per sq., according to color and thickness.
1/2 x 25" Resawn Cedar Shakes, 10" Exposure 10.50
3/4 x 25" Resawn Cedar Shakes, 10" Exposure 11.50
1 x 25" Resawn Cedar Shakes, 10" Exposure 12.50
Above prices are for shakes in place.

Sheet Metal—

Windows—Metal, $1.75 a sq. ft.
Fire doors (average), including hardware, $1.75 per sq. ft.

Skylights—(not glazed)

Copper, 90c sq. ft. (flat).
Galvanized iron, 40c sq. ft. (flat).
Vented hip skylights 60c sq. ft.

Steel—Structural (None available except for defense work)

$150 ton (erected), this quotation is an average for comparatively small quantities. Light truss work higher. Plain beams and column work in large quantities $140 per ton.

Steel Reinforcing (None available except for defense work).

$150 to $200 per ton, set.

Stone—

Granite, average, $6.50 cu. foot in place.
Sandstone, average Blue, $4.00. Baise, $3.00 sq. ft. in place.
Indiana Limestone, $2.80 per sq. ft. in place.

Store Fronts—

Copper sash bars for store fronts, corner, center and around sides, will average $1.00 per lineal foot.
Note—Consult with agents.

Tile—Floor, Wainscot, etc. — (See Dealers)

Asphalt Tile—18c to 28c per sq. ft. installed.

Wall Tile—

Glazed Terra Cotta Wall Units (single faced) laid in place—approximate prices:

2 x 6 x 12	$1.00 sq. ft.
4 x 6 x 12	1.15 sq. ft.
2 x 8 x 16	1.10 sq. ft.
4 x 8 x 16	1.30 sq. ft.

Venetian Blinds—

40c per square foot and up. Installation extra.

Windows—Steel

Factory type sash 30c ft.
Ventilators for steel sash $5.00 each.

1942 BUILDING TRADES WAGE SCALES FOR NORTHERN CALIFORNIA

*6-hour day **7-hour day

CRAFT	San Francisco	Alameda	Fresno	Marin	Sacramento	San Jose	San Mateo	Vallejo	Stockton
ASBESTOS WORKERS	$1.50	$1.25	$1.25	$1.37½	$1.12½	$1.25	$1.25	$1.25	$1.25
BRICKLAYERS	* 1.75	* 1.75	* 1.50	* 1.75	* 1.75	* 2.00	* 1.79-1/6	* 1.75	* 1.75
BRICKLAYERS' HODCARRIERS	* 1.35	* 1.25	* 1.05	* 1.25	* 1.05	* 1.35	* 1.35	* 1.40	* 1.14
CARPENTERS	1.37½	1.37½	1.25	1.37½	1.25	1.25	1.37½	1.25	1.25
CEMENT FINISHERS	1.37½	1.37½	1.25	1.25	1.25	1.50	.....	1.25	1.25
ELECTRICIANS	1.50	1.50	1.50	1.37½	1.50	1.50	1.50	1.50	1.37¼
ELEVATOR CONSTRUCTORS	1.61	1.56	1.50	1.61	1.61	1.50	1.50	1.56	.....
ENGINEERS: Material Hoist	1.50	1.37½	1.25	1.50	1.37½	1.62½	1.37½	1.37½	1.25
Piledriver	1.75	1.60	1.60	1.75	1.75	1.75	1.62½	1.75	.....
Structural Steel	1.75	1.60	1.60	1.75	1.75	1.75	.....	1.60	1.60
GLASS WORKERS	1.25	1.25	1.12½	1.25	1.12½	1.21	1.25	1.25	.....
IRONWORKERS: Ornamental	1.50	1.31¼	1.37½	1.31¼	1.37½	1.31¼	1.25	1.31¼	.....
Reinf. Rodmen	1.50	1.31¼	1.31¼	1.31¼	1.31¼	1.60	1.31¼	1.31¼	1.25
Structural	1.75	1.60	1.60	1.60	1.60	1.75	1.50	1.60	1.37½
LABORERS: Building	.85	.87½	.82½	.81¼	.85	.81¼	81¼	.81¼	.80
Concrete	.87½	.93¾	.90	.81¼	.92½	.....	.85	.90	.90
LATHERS	* 1.75	* 1.75	* 1.50	* 1.75	* 1.60	* 1.75	* 1.75	* 1.50	* 1.50
MARBLE SETTERS	1.43¾	1.25	1.25	1.31¼	1.37½	1.25	1.31¼	.....	.....
MOSAIC & TERRAZZO	1.00	1.25	1.12½	1.12½	1.15-5/8	1.12½	.....	.....	.....
PAINTERS	** 1.37½	** 1.50	** 1.28-4/7	** 1.37½	1.25	** 1.35-5/7	** 1.42-6/7	** 1.50	1.25
PILEDRIVERS	1.47	1.40	1.40	1.50	1.40	1.47	1.40	1.40	.....
PLASTERERS	* 1.66-2/3	* 1.66-2/3	* 1.75	* 1.66-2/3	1.75	* 2.00	* 2.00	* 1.75	* 1.83-1/3
PLASTERERS' HODCARRIERS	* 1.50	* 1.45	* 1.40	* 1.40	* 1.18¾	* 1.35	* 1.75	* 1.40	* 1.50
PLUMBERS	1.52½	1.50	1.53-1/8	1.50	1.56¼	1.62½	1.50	1.50	1.37½
ROOFERS	1.37½	1.37½	1.12½	1.25	1.25	1.37½	1.25	1.25	1.25
SHEET METAL WORKERS	1.37½	1.37½	1.43¾	1.37½	1.50	1.50	1.37½	1.25	1.37½
SPRINKLER FITTERS	1.50	1.37½	..	1.25	.....	1.62½	.....	1.50	.....
STEAMFITTERS	1.50	1.50	1.53-1/8	1.50	1.56¼	1.62½	1.50	1.50	.....
STONESETTERS (Masons)	* 1.50	* 1.75	1.50	* 1.75	* 1.75	* 1.50	1.75	* 1.75	* 1.50
TILESETTERS	1.50	1.37½	1.37½	1.37½	1.37½	1.50	1.50	1.37½	.....

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A RETIRED ARCHITECT SPEAKS

. . . I remember a story about Mr. Frank Miles Day that always amused me. It was something like this: Mr. Day was on the witness stand, and a heckling lawyer said to him: "Mr. Day, did you ever make a mistake?" "Not that I can remember," said Mr. Day.

But coming back to "practice," the only way anybody can get anything is by practicing it. You practice tennis, or you practice bridge; and practice makes perfect. The Greeks kept on building temple after temple, and the Christians kept on building cathedral after cathedral, and damn the expense. The competitive thing was there, and the practice thing was there, and both outfits took two or three centuries in the process.

Now, there was another place where the ancients had the advantage over us moderns in architecture, and that was that they had plenty of money to spend. I do not like the term "money," because perhaps it was not money in those days. It was really energy; just a flow of human energy that could be controlled and directed. We have the exact same flow of energy today, except I suppose it is ten to one hundred times as big as in ancient times, but that flow of energy does not go into architecture. It goes into airplanes and tanks and ships and motor cars. It goes in by the billion. The fellows who are building airplanes today can put out a cheap little machine for a couple million dollars or so, and have it blown up and everybody killed, and all that is said is, "Oh, well, what the hell, we learned something." So they start in to build one costing more, and rectify their mistakes.

We are not allowed to do that in architecture.

An architect once told me there were only two main questions the clients ask. One was: "When will it be done?" The other was: "How much will it cost?"

The airplane builders and the tank builders are asked: "When will it be done," but as for the cost, the hell with that.

I said, a little way back, it was an advantage to be able to talk from the position of one who has retired. I realized, through the "grape-vine" — and, really, it was not very difficult for me because the "grape vine" was something pretty articulate—that I was supposed to be a most terribly expensive architect. This irritated me, and to my dying day I will never believe it. Of course, the meat of the matter is, not how many dollars and cents does a particular thing cost. The real word is the one so frequently used by our Business brethren—namely, Value. There is a question which comes in here of the relation between how much does it cost and how much do you get. An architect's job is not to save money. The owner pays him to spend money. If he doesn't know how to spend money he is no good as an architect. . .

We all know, I suppose, the Paris Opera House. To me, that always seemed a magnificent example of spending money. It was done fairly recently—about 1870, I think—and when one examines it architecturally one finds that Mr. Garnier must have had a very definite idea that an opera house looked nice with a whole lot of people moving up and down staircases. What I am getting at is that a large percentage of the cube of the building is simply devoted to staircases, and devoted at the price, I fancy, of a good many million francs.

It is quite an important thing in a discussion of this kind to come to what the debaters call the "definition of terms": What is Architecture? A cathedral, a palace, a great house? They are all architecture. But can we call an office building, an apartment house, a factory, or a housing project (and I know at this point I am treading upon some of you gentlemen's toes) architecture at all? I do not think so. Not in the big sense. These latter classifications are designed to make money, and the former, as I pointed out before, are designed to spend money. Perhaps that makes a pretty clear line of demarcation. The two types look different.

If we are considering the countenances of two human beings, and one was a holy man like St. Francis of Assisi and another was a good man like George Washington, would we expect their countenances and their kind and patient and sorrowful eyes to look the same as the dirty glint in the eye of a money-lender? The jobs that St. Francis and George Washington had to do make them look one way, and the money-lending job makes the money-lender look the other way.

So it all comes down to this: that architecture is a pretty troublesome kind of companion—one that is very lovely when achieved but pretty hard to achieve.

I have not said much so far about ancient and modern house architecture itself. I am really afraid to tackle the subject.

I cannot keep from laughing at the very hot-stuff Modernists. They seem to be in a perfect fury about something. They are mad all through. It seems as if they suffered from frustration. The argument is, very simply, that one must not be a stick-in-the-mud, and one must move with the times but when they get going, they knock out everything that got done in the past, both the good and the bad, and by that time it always seems to me that they have gotten themselves into a fix.

Now, just why should a house be built mostly out of glass? And yet, as far as I can see, that is one of the ambitions of the Modern. Put in the glass and let the light in, and put up the curtains and keep the light out. Put in the glass to make it cold, and pile in the radiation to counteract it. Fine for the glass manufacturers and fine for the heating manufacturers, but what happens to the poor benighted creature that has to live inside? He likes to look at the view, he says. Most of the time when he is indoors he spends looking at a glass circle at the bottom of a whiskey-

and-soda, and most of the views he could look at—he'd better have his back to.

However, if we approach the subject from the Gallup Poll standpoint, and consider the thousands or hundreds of thousands of horrible little houses that are going up all over the countryside, and selling anywhere from $4,000 to $8,000, we find that very few indeed are Modern. There seems to be a passion for Brick; little brick so-called Colonial houses, with double-hung windows and variegated materials to put in the fanciful touch; a house of brick with a couple of stone corners, and maybe some clapboards put in just to mix things up and attract the buyer — though God knows why.

As perhaps some of you know, I never went to school myself, but grew, just like Topsy, and any little thing I found out about architecture came mainly through my eyes. I used to go to Europe pretty often shortly after we started in practice, and every time I came back some poor client got himself fixed up in a house in the style of the country I had last visited. After a trip to England, in the Cottswold district, in 1911, nothing would do but that I must jam my best friend into what was as near as I could come to the Cotts-wold manner, done at St. Davids, Pa. This one had casement windows in it, opening out, and in big groups; and a hell of a time I had selling that idea to a cross old real estate man, who said it was very well for me, a young man striving to make my reputation, but what was going to happen to him, poor soul, who had to put up the money? The only way I got that cross old real estate man to go ahead with it was to waive my own commission until after the house should be sold. That little offer did the trick and the old fellow lapped up the idea like a kitten. It may be of some interest that the house ultimately did get sold, and for a good price.

The next time I went abroad I went to Italy, and after that, Frank McIlhenny was the sufferer. I tried to get him to build an Italian house but he choked over it, so what ultimately got done was partly Italian and partly Meigs.

Then the War came, and French Ways and Their Meaning bit deeply into me . . . By this time I felt as if I were trying to talk an architectural Esperanto, and being young and energetic I spent all my time trying to make everything as difficult as possible; difficult for me, difficult for the builder, difficult for the owner. But there was a lot of fun mixed up in it.

Finally, with old age creeping on, it seemed to me that just to build a decent house was trouble enough, and so, in the last five or ten years most of our stuff has been just ordinary Georgian. When I say "Georgian," I mean windows that slide up and down.

Then there is another reason why I think house architecture is harder to do than it was thirty years ago, and that is on account of the decay of the state of mind of the client. Something seems to have happened to clients. They got "took," as it were. The economists have got hold of them, and the specialists have got hold of them, until they have got to the point where they don't trust anybody or anything. They seem to think they can design a house as well as the architect. This is an old tendency, but getting always worse. It is quite possible that this same tendency goes through other professions — like the Law and Medicine, but I think not quite as badly as it does through Architecture. But, at any rate, it is all caused by surrounding world conditions.—From a talk before the Philadelphia Chapter, A. I. A., by Arthur I. Meigs.

NEED OF AFTER-WAR PLANNING

"It is apparent that the requirements for the procurement of needed materials and equipment for the entire field of automotive transportation are now, and for a long time to come will remain, largely subject to the restrictions and limitations necessarily imposed on the national economy by the war effort," says Thomas H. MacDonald, Commissioner of Public Roads, in April American Highways. "It is confidently expected that the more extensive use of existing motor vehicle equipment and highway facilities, coupled with the enforced postponement of much needed replacement for an indefinite period, will build up a latent reservoir of needed production after the war.

"Planning for the future peace, therefore, must of necessity be a part of our all-out war program.

"Foremost on the 'shelf' of public works to be made available in the future, not alone in response to pent-up needs but by reason of long-standing neglect, is the type of project concerned with urban redevelopment and housing. Conditions resulting from rapid changes incident to modern industrial development and in methods of transportation have been permitted to lapse.

"Problems of traffic congestion, of the lack of co-ordination of all transportation, of inadequate parking space for motor vehicles, of over-dense populations and needed recreational areas, have not been frankly met in the past, can not be adequately dealt with in the present emergency, but will have to be faced in the future.

"The need for the extensive replanning and rebuilding of our American cities and towns will require the combined efforts of our several administrative agencies of Federal, State and local government together with the maximum aid of private enterprise. It is to be hoped that such rebuilding may be the result of rationalization of our needs rather than the result of the wholesale devastation that is war."

ALBERT KAHN HONORED

Albert Kahn, Detroit architect, has been awarded the degree of Doctor of Fine Arts by Syracuse University.

HOMES FOR WAR WORKERS

To provide homes for war workers the public war housing program must be stepped up to accommodate five times as many homes in a third the time as in any previous public housing effort, Commissioner Herbert Emmerich of the Federal Public Housing Authority declared in an address at the tenth annual meeting of the National Association of Housing Officials in Baltimore, May 13.

This unprecedented schedule of construction is necesary, he said, to provide shelter and decent living conditions for the great army of migrating workers demanded by the war industries. These workers must be provided adequate housing if our army and navy and air forces are to be sustained and are to prevail.

"The shortage of material for new construction is increasing monthly," Mr. Emmerich said. "To talk of priorities has become almost academic at a time when there are less nails being made than we need—and in a month when lumber of certain types cannot be had even at its source in the Pacific northwest—when there is not enough copper for strictly military requirements, let alone essential civilian ones and when the demand for steel necessitated a general limitation order. The strain on our supply of basic materials in a program of this magnitude can hardly be visualized. It has to be felt—and we are feeling it now with a vengeance.

"The situation changes from week to week with such rapidity that it is difficult to keep up with," he continued. "It is so acute that suddenly, not by choice, but by compulsion, we are forced to reconsider our entire war housing policy. Because of material shortages, building must be prevented whenever and wherever possible. New methods of enlisting labor—men and women already in communities—must be found. New methods of using existing shelter and spare rooms and spare beds must be employed. Non-war workers may have to swap homes with war workers in war towns. Rents must be controlled. In the housing we cannot avoid building, severe economies must be practiced.

"The transportation shortage is our second problem," Mr. Emmerich said. "It not only makes necessary a distortion of community planning and location of shelter for new workers but sharply accentuates the entire housing problem by making unavailable much existing shelter which had been located on the assumption that one could go to work on wheels.

"The third point concerns public attitudes needed to preserve high production rates," he declared. "Here we find dual forces at work which cancel each other and may be a more serious threat to war housing than either material shortages or the transportation famine. First is the attitude that we can get ideal and beautiful permanent homes everywhere out of the war housing program. We built some excellent projects in the days of **defense** housing. I hope we can do good **war** housing projects as well.

"But the odds are against us from now on to do many permanent family communities. Only in exceptional cases will we be able to build housing which has any prospect of being permanent. It will be made of the wrong material for permanence because of shortages; it will be in the wrong places for permanence because of lack of transportation; it will be for the wrong people for permanence because of the great migration to new plants manufacturing things which we shall not need to make forever. The job tenure and therefore the housing need, of the workers is far from certain in such communities.

"These standards on which I believe the Federal Public Housing Authority should insist are simple to describe in non-technical terms. There will, of course, be dormitory communities for men and also for women, and war apartments for married couples without children when both are likely to work in nearby plants. These dormitories must provide for health with decent sanitary facilities, they must provide for privacy and quiet for the day shift and the night shift. Children have no place in these communities for they should have freedom in their play which would disturb the sleeping night workers. These communities need social rooms and cafeterias and medical services and space for reading, writing, and for recreation—indoors and outdoors. They need excellent and understanding management, for many men and women will be away from their homes and their own communities for a long period of time. They must have some neatness and orderliness in their appearance and surroundings and some means of enlisting the good will and participation of the occupants in their community problems.

"In the family accomodations, the house should be a self-contained family unit, and at all costs, we should fight to avoid in all-year-round family housing such makeshifts as common baths and toilet facilities which we have come to view as substandard elsewhere. Stores and schools and recreation facilities are essential parts of housing, and if not already present in the community are as much a necessity to provide as pure water and an adequate milk supply. If many women take jobs, child care will be an increasing problem. Health and fire protection and good administration are likewise essentials of these projects. These things cost money and materials, to be sure, but we know from experience that they are necessary to a long sustained production effort. We must fight for the essentials be they ever so simple. We cannot honestly support standards lower than these although we may be compelled in this emergency to accept a smaller percentage of family houses. We must take our stand for sensible and humane standards in a temporary shelter program. These communities can be simple and attractive."

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NEW FIELD FOR ARCHITECTS

New opportunities are open to architects in the quantity production of prefabricated housing units, Arthur C. Holden of the New York Chapter of the American Institute of Architects says in a report to the Institute.

Prefabricators look upon "open-minded architects as their strongest allies in the movement to get rid of mystery and red tape in the building industry," according to Mr. Holden.

"It is architects of this type that the prefabricators are eagerly seeking. It is these architects whom the public will single out for reward, for the public will be the ultimate beneficiary. Let it be remembered that the public cares nothing about the prerogatives of making drawings.

"The public wants an increasingly better product for less money. The public will follow those who lead in this direction. Architects have a great part to play in the shaping of the future. To grasp the opportunity, architects must do more than talk at the prefabricators. They must come into tangible contact with the work under way, and be ready to shape their methods to give the public improved service."

Some architects are ready "to throw away their pencils and design in three dimensional models," Mr. Holden said. Others, however, fear that "the spirit of design might be destroyed" in producing drawings for prefabricated units, according to Mr. Holden. But, he added, with quantity production the range of design has been greatly extended.

"It is no longer necessary for the individual practicing architect to put on horse blinders to shut out the disharmony of the surrounding neighborhood, while he lavishes his ingenuity on the over-embellishment of one single house. The house now becomes a unit in the neighborhood pattern and it is essential that its beauty be of a type which harmonizes with and enhances the beauty of its neighbors, rather than of a type to rival them for attention.

"To put it mildly, the prefabricators have been disappointed that so few architects have grasped the opportunities that are offered to them. Perhaps the explanation lies in the architect's conception of his own job. To those architects who consider it their job to utilize every available facility to produce a better house, prefabrication offers no terrors. Such architects will seize upon prefabrication to find out what use they can make of it.

"To those architects, however, who consider that the making of drawings ought to be a monopoly to be enjoyed as a private prerogative, the growth of prefabrication appears to offer a threat to their livelihood.

"Too few architects are asked today to work out a design for a neighborhood or a street. Too many architects are still being asked to submit half a dozen or more designs of houses so that when these are used all the houses on the street will not look alike.

"In some of our larger projects today, mortgage underwriters are laying down rules that no design may be repeated more than a specified number of times. This shows almost a complete misunderstanding of the problems.

"An imaginative and well trained architect could take a design for a single house and by varying its placement and grouping could work out a scheme for a neighborhood far surpassing in beauty, practicality, and economy, a scheme where money had been unintelligently wasted merely in the attempt to make each individual house look different.

"Give a real architect an understanding of what prefabrication means and he will grasp the opportunity and deftly apply the new technique which is placed at his disposal. He will accept the fabricated chassis; he will put emphasis upon the setting and the variation in detail, texture, and color which he can give to it.

"What the prefabricators want to know is why more architects have not come forward with eagerness to grasp the opportunity before them, and to play their part in developing an improved technique."

TO DISREGARD BUILDING CODES

Adoption of a new emergency building code which would stipulate the maximum of materials to be used for any objective rather than the minimum, is urged by Lieutenant Commander John H. Brachts, U.S.N., in a report to the Producers' Council, affiliated with the American Institute of Architects. All existing codes, including Federal, state and municipal, should be set aside for the duration of the war, Commander Brachts asserts.

New specifications for the working stresses to be employed in designs where critical materials are permitted are badly needed, according to Commander Brachts, who points out that present working stresses could with reasonable safety be raised from 20 to 40 per cent in various loading cases.

"The improvements in quality and uniformity of materials over the last twenty-five years have been very great, whereas the design stresses have remained practically unchanged," he says. "This is a wonderful opportunity to correct this situation permanently.

"In fixing new stress limits careful consideration must be given to the frequency and duration of the loadings to be designed for and the hazards involved in the field if partial failure should occur. For example, local failures or cracking due to temperature stresses seldom involve serious damage to the structure.

"The unwatering of a dry dock with a Tremie bottom offers a good example of infrequent loading. Here the critical steel stresses only exist until the additional twelve or eighteen inches of top finish have been placed.

"In such or similar cases the emergency code should be liberal enough to enable the designer to use very high stresses, that is, to come quite close to the yield

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point. Furthermore, the designer should be allowed to make extensive use of hard grade steel where no dynamic effects are involved, especially where heavy straight reinforcement is required.

"In regions where earth tremors may occur, considerable amounts of steel are often necessary to make structures earthquake proof. In semi-permanent defense structures I believe that we might take a chance that an earthquake will not occur during the comparatively short useful life of these structures.

"As a general rule we must reduce the safety factor to a minimum for such loadings that we know will never be exceeded. The term 'safety factor' should mean just what it purports and should not be a factor of ignorance as is too often the case.

"Similar stress considerations should, of course, be given to all other improved building materials. It will represent a tremendous national saving not only now, but in the reconstruction period after the war."

Designers on projects with high priority ratings must realize that conservation is equally as important as speed, Commander Brachts declares, adding that defense courses in advanced structural analysis should be encouraged in universities and technical schools because careful structural analysis is of great importance for conservation.

"For guidance of designers in arriving at the best type of construction, a price list could perhaps be prepared giving relative dollar-weight to each critical material, irrespective of actual market price," Commander Brachts continues. "In other words, create a steel dollar, a cement dollar, and so on, for use only in comparative estimates of different types of construction for the selection of the one that requires the least amount of critical materials."

Utilization of earth structures wherever possible, and of timber piles in place of reinforced concrete, and the avoidance of purely structural designs, are listed by Commander Brachts as part of a program for planning and designing more or less permanent structures with a minimum of critical materials.

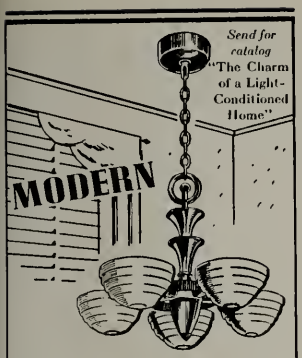
"Design in all cases as nearly as possible to the required useful life of the structure," he urges. "Right now we are mainly interested in winning the war. When we have won it, we will have plenty of time to modify our work."

E. I. WILLIAMS NEW PRESIDENT

Edgar I. Williams was elected president of the New York Chapter of the American Institute of Architects to succeed Harvey Stevenson at the recent annual meeting of the Chapter. Presentation of the Chapter's 1941 Certificates of Merit for excellence in small house design was also made at the meeting.

MAGINNIS AWARDED GOLD MEDAL

Charles D. Maginnis, distinguished Boston architect, past President of the A.I.A., has been chosen this year's gold medalist of the American Irish Historical Society.



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PLANNING GOOD HOSPITALS

Planning good hospitals calls for constant adaptation of new techniques and materials to the purpose and local conditions of each institution, declares Addison Erdman, New York architect, in a report of a survey of more than eighty hospitals to the American Institute of Architects.

"The development of new ideas resulting from modern research and inventions will always be a stumbling block to standardization," says Mr. Erdman, who, as an Edward Langley Scholar, spent two years studying hospitals in many parts of this country and Canada. "Private rooms are getting more and more luxurious, as each hospital wants something a little smarter than anything anybody else has. It is here that new gadgets get their trial and some attain permanency as hospital practice.

"Human nature, with its likes and dislikes, warps judgment in hospital planning and equipment, just as violently as in politics and religion. For instance, there is a difference of opinion regarding operating room lights. In one hospital three different types of lights were in use to satisfy the requirements of different surgeons. It is possible that a new type of light, developed in France and now used in France and England, may prove to be the one to satisfy all objections. I have not heard of its being used in the United States as yet.

"One of the most important trends is towards centralization in the design of special types of hospitals. Although there is no doubt that centralization has many good points, there are three main pitfalls: carrying centralization so far beyond reason that it becomes a source of trouble rather than a benefit; extension of centralization beyond the ability of the personnel available; and failure to provide in the building plan for its proper functioning.

"In some of the larger institutions there are groups of buildings for patients and one main building in the center housing all the treatments. This plan may be considered efficient from an administrative standpoint, but it

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relegates the comfort of the patient to secondary importance. He must be wheeled great distances and taken up and down elevators, with waits in corridors and lobbies for his turn to be propelled elsewhere, to be treated or operated on.

"However, centralization within each service, or of services related to each other, is of benefit to both the staff and the patients, eliminating a great deal of long-distance hauling. The only disadvantage of this plan is that the executives have to do the traveling to visit their patients.

"The second pitfall pertains to small hospitals in outlying districts where skilled help is scarce. In such hospitals high pressure steam, electric generators, central refrigeration and sterilization, and air-conditioning plants overtax the ability of the engineer and his assistants. In such localities, the architect should strive even more than usual to simplify all procedures and reduce all complex problems to their simplest terms. Furthermore, no complicated apparatus should be installed in communities where the manufacturers' maintenance crews are not available in case of trouble.

"To provide for the smooth functioning of centralization, each service should be so arranged that it can be reached from a central point of entrance and in no case should traffic go through one service to reach another. Corridors should be wider to accommodate increased traffic in centralized services. Large waiting spaces and lobbies should be provided at elevators and at entrances to treatment rooms, because centralization causes a definite trend towards longer waiting. To take care of increased elevator service, elevators should be grouped at least in pairs so that if one breaks down there will still be a car in use."

The tendency today is to reduce the size of wards, Mr. Erdman points out. A new development for screening beds is being evolved in which the dividing partitions are seven feet high of masonry with terrazzo bases and glazed upper sections.

"Very little has been done in sound-absorbing materials for wards," he adds. "Acoustic plaster, although not

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the most efficient material for sound absorption, is somewhat cheaper than hard plaster and decidedly better than no acoustic treatment at all. Flooring throughout wards is generally asphalt tile, rubber tile or linoleum, with terrazzo borders and bases. Although it is the general opinion among hospital workers that hard floors are more fatiguing, it is really the slipping hazard that causes fatigue.

"The best solution for ward lighting is to be found in the new Hospital for Chronic Diseases, Welfare Island, New York City, where the lights are recessed in the ceiling with 'egg-crate' louvers. These louvers prevent the light from shining into the patients' eyes. In the same hospital there is a hooded lighting reflector built on the wall or partition over the head of each bed. Each patient thus has a bed light that will not disturb the occupants of adjoining beds.

"A very efficient labor-saving device, particularly where the nurses' station is at some distance from the patient's room, is the push button type nurses' call system with microphones at the push buttons so that patients can talk to the station, where there is a loud speaker. This loud speaker can also be connected to listen to the bedside, and thus be used to check upon the patient's condition and activities. This system is used in New Rochelle Hospital, New York, and the Jewish Hospital, St. Louis.

"In all hospitals throughout the country, the main criticism of corridors is the lack of wall protection against damage from carts and wheelchairs. Structural tile wainscots are the best forms of protection, and where there are long unbroken walls the expense does not run unreasonably high.

"Wherever solaria are glazed and heated they are misused as wards. Open porches, which cannot be made into wards, are most satisfactory and are necessary in addition to enclosed day rooms, so that even if the day rooms are used as wards the patients still have the porches.

"The experiments with washable wallpaper in private rooms will no doubt continue. Venetian blinds are now considered standard equipment. There are many private baths for which the need is negligible. A connecting bath between two rooms, with correlated latches similar to hardware on French Pullman cars, is a refinement that could be used more often.

"In operating rooms, white tile is no longer in first place for wainscots; gray-green and gray-blue are becoming more popular. Although modern practice has grown away from the high plate glass windows with skylights above and elaborate glass screens within the room, there is still a tendency toward a large window with casement openings on each side. Some frankly ignore the use of natural daylight, especially where viewing galleries are hung from the floor above, and a glass dome or baffle cuts off the observers from the operator.

"Humidity control seems to be the recognized safeguard against explosions in operating rooms. The answer seems to be in a real air-conditioning unit similar to that in the operating rooms at Mount Sinai Hospital, New York.

"Various techniques have been developed to isolate babies and protect them from cross-infection. Some hospitals divide the nursery into glazed cubicles for each infant in a separate bassinet. A very interesting experiment is being made at The Cradle, Evanston, Ill., with three different techniques.

"In one, each bassinet is in a separate cubicle with wire glass partitions to the ceiling; each cubicle is air-conditioned and has its own sink and work table. In another type, in addition to this arrangement, each cubicle has a germicidal ray shining down across the front from the ceiling.

"In a variation of this type, there are two bassinets and sinks in each cubicle, with a railing down the center and germicidal rays across the front and down the center over the railing. In this cubicle the babies are isolated from each other by rays only. The railing is to protect the nurses from over-exposure to the center rays.

"In the third type, the baby is reached only through its individual nurse's cubicle, which contains a work table and sink and is air conditioned. After entering it, the nurse must close its wire glass door and remain there at least three minutes before raising the sliding glass panel to the baby's cubicle. This cubicle is also air-conditioned, with a change of air every three minutes, slightly under pressure, so that the air always moves from the baby's cubicle towards the nurse's. The babies are never removed except for weighing.

"The very fact that there are so many different solutions for the same problem in different localities, all satisfying the individual cases, shows that the architect must keep his mind open to study every question. Meeting and conversing with superintendents, administrators of departments, and maintenance crews point the way towards further progress by revealing the actual value or lack of value of various theories."

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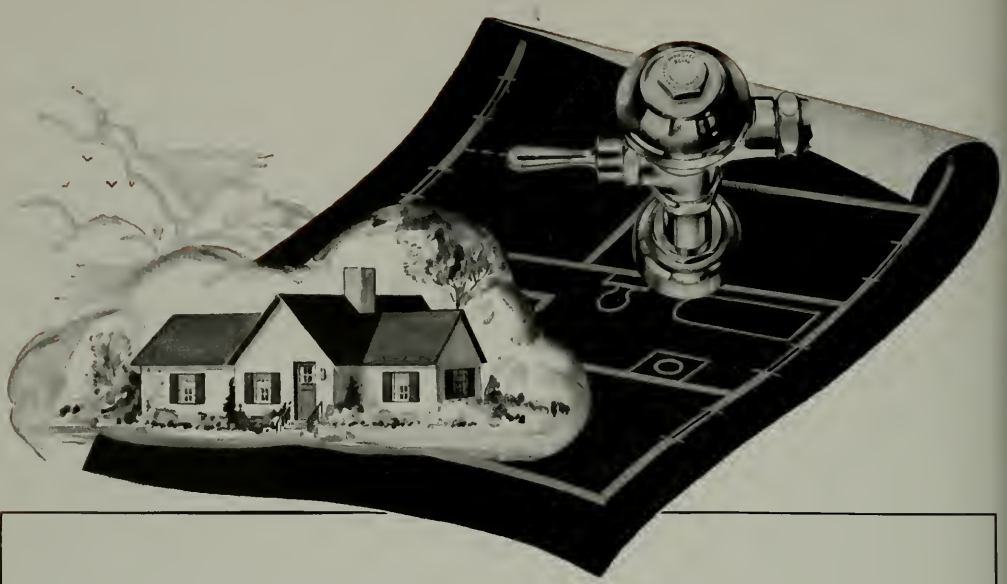

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NEXT MONTH

No HOUSING program on the West Coast has attracted greater public interest than Pueblo Del Rio, one of nine low-rent projects sponsored by the Housing Authority of the City of Los Angeles. Completion of the last group a few days ago—two months ahead of schedule—marks the realization of an intensive program unequaled by any similar project in the State.

There are 57 apartment buildings and an administration building, all replacing one of the older residential areas covered with sub-standard structures which long since had served their usefulness. The new apartments range from three rooms to six and one-half rooms each.

The story of this $2,000,000 project will be told in detail in ARCHITECT AND ENGINEER for September with illustrations taken especially for this magazine, showing close-ups and general views not heretofore published. This is the second of a series of articles describing recently completed projects by Housing Authorities in leading Coast cities to be featured.

In October, Oakland's three major projects, Campbell, Peralta and Lockwood, will be shown.

For Sale—Business Leads —at *One Cent Each!*

A DAILY advance building news service, reporting construction projects for the Northern California area, comes to its subscribers in the form of handy, individual slips, giving name of project, location, architect, proposed cost and other pertinent and valuable data.

ARCHITECTS' REPORTS, as the service is called, is mailed daily, and the average number of these reports runs over ONE THOUSAND MONTHLY, based on our current count.

At a cost of $10 per month, the reports actually reach the subscriber at less than ONE CENT EACH.

Building material houses and contractors in the San Francisco Bay region use ARCHITECTS' REPORTS to help their salesmen round out a profitable day. This service is sponsored and endorsed by the State Association of California Architects. Its compilation cost runs into the thousands of dollars, yet the service is made quickly available to subscribers for a most nominal charge. If you want YOUR share of this daily big business in building materials, subscribe now to ARCHITECTS' REPORTS. Samples sent on request; phone EXbrook 7182.

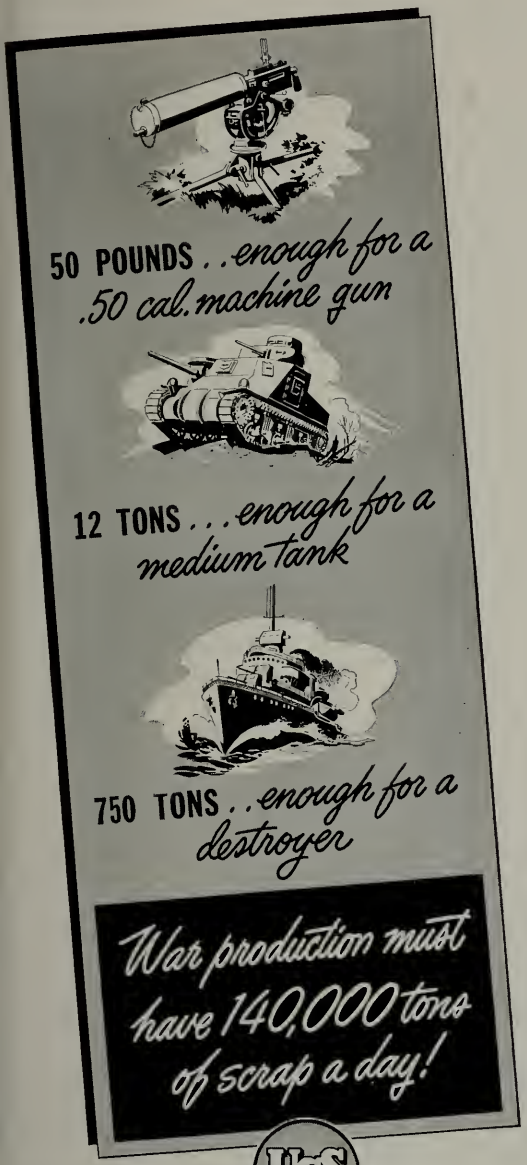
ARCHITECTS' REPORTS

Published by

THE ARCHITECT AND ENGINEER, INC.

68 Post Street, San Francisco

How much SCRAP can you mobilize every week?


50 POUNDS . . enough for a .50 cal. machine gun
12 TONS . . . enough for a medium tank
750 TONS . . enough for a destroyer
War production must have 140,000 tons of scrap a day!

THE plain fact is—we can't win this war without plenty of steel. But if we are to have plenty, all factories, mills, shops, mines and other units of American industry must organize at once to turn in every available pound of scrap metal—and keep on turning it in regularly. At least six million tons more scrap must be collected than last year!

Where is this "extra" scrap?

It is certain that vast quantities of precious iron and steel lie idle in unsuspected hiding places throughout the country. Part of it may be on your premises. The usual methods of collection will not release enough to meet present demands. It will take special diligence on the part of management and workers alike to put the 1942 Scrap Drive over the top. To check the efficiency of your salvage methods, see if you are turning in all three of these classes of scrap:

"BREAD-AND-BUTTER" SCRAP—The kind most plants sell regularly — filings, shavings, stampings, rejects — metal scrap created in the process of manufacture or construction.

DORMANT SCRAP—Unused or abandoned equipment, broken or worn-out machine parts, old boilers, moulds, dies, pipe, valves, electrical equipment, engines, trucks, etc.—the "junk" that accumulates but often misses routine scrap collection.

"RAINY-DAY" SCRAP—The hardest of all to part with. Includes obsolete machinery, unused metal buildings, stacks, outdated tools, fixtures, patterns, stocks, etc.—idle now because they're being saved for possible use in some indefinite future emergency. The emergency is here! This metal should be scrapped, unless it can be reconditioned and put to work now.

If you haven't already, we suggest you organize your own scrap drive. Your local Industrial Salvage Committee will help you plan a forceful program. Put some one individual in charge of salvage in all departments of your business, and give him authority to act. Promote the drive to your employees with posters and prizes. Emphasize speed and continuous effort. Make them all "scrap conscious." If you need more information, contact the Bureau of Industrial Conservation, War Production Board, Washington, D. C.

YOUR SCRAP IS WORTH ITS WEIGHT IN VICTORY

★ ★ ★

COLUMBIA STEEL COMPANY, *San Francisco* · AMERICAN STEEL & WIRE COMPANY, *Cleveland, Chicago and New York* · CARNEGIE-ILLINOIS STEEL CORPORATION, *Pittsburgh and Chicago* · NATIONAL TUBE COMPANY, *Pittsburgh* · TENNESSEE COAL, IRON & RAILROAD COMPANY, *Birmingham*

UNITED STATES STEEL

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TRY LIGHT! If your eyes are suffering from faults, either natural or brought about by bad seeing conditions, then you MUST have light as near perfect as you can get it, in order to offset your handicap.

TRY LIGHT! Good light. Right light.

See what a transformation it makes, not only in your seeing, but in the appearance of your room.

If you are not exactly sure what constitutes GOOD light, send in the coupon for a free copy of this booklet that will help you to select your lamps wisely.

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Please send me your booklet on lighting.

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In This *Total War...*

THOUSANDS of Californians have been forced to lay aside their home-building plans "for the duration."

Bank of America, always the national leader in home financing, continues to offer real estate and FHA loans, modernization loans and many other types of home financing and re-financing. But like you and the other members of your profession, we have put the job of winning the war above everything else.

When peace comes we shall look forward again to stimulating home-ownership throughout the state.

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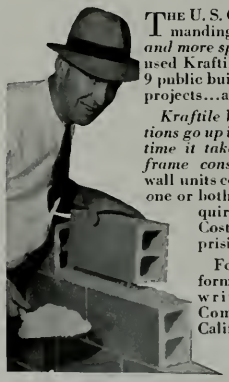

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War demands efficiency . . . good, fresh drinking water aids in creating efficiency. The Chemurgic Corp., manufacturing war materials in Northern California, have installed a HAWS Electric Water Cooler in their cafeteria for their employees' convenience. This unit amply supplies cool drinking water during maximum hours. Special equipment of two or four glass trays are available on special order, also additional Water Stations for use with Restaurant Water Coolers.

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Model No. 3G3—with chrome plated brass shielded anti-squirt angle stream fountain head and automatic pressure regulating stream control valve. This unit especially adaptable for factory use.

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Model No. 7A June—for office use. This fountain has anti-squirt drinking fountain head and stream control.

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RUNNING FIRE — By MARK DANIELS, A. I. A.

• *THE NEGRO COMPLEX*

It is not unusual for easterners to assume that what is true in the Atlantic Coast States holds true throughout the Union. The easterner's conception of distances, climate and the American Indian, for example, is born of imagination rather than inspection as is their conception of the negro's condition in the west, which conception is enhanced, of course, by a vivid picture of how he is treated in the southeast.

There is no question of the unfairness and injustice that is meted out to the negroes in the deep south, or the miserable conditions in which they are forced to live, but this does not hold true in the same degree in the west. I, personally, have been in many western cities and towns where negroes are liked and where you can see their children at play in the school yards on an equal footing with the white children. In San Francisco they seem to be the happiest of all the citizens these days.

This does not mean that the colored people in the west are accorded all the rights of citizenship which are enjoyed by the whites. The only universal privilege which they share on an equal footing with the whites is the right to be drafted—to fight and to die for the country. Nevertheless their condition out west is a vast improvement over their condition in the east. On the streets are to be seen colored policemen, colored postmen, and colored workmen, although, at present, but a few are in the building trades. The labor unions that have so zealously guarded their lily white organizations against membership by colored craftsmen, in some locations in California, have at last admitted negroes. In the navy ship yards colored men have even been admitted to some machinist unions and more and more colored boys are to be seen in the trade apprentice schools.

Perhaps this tolerance, so characteristic of the west where we preach and practice the live and let live principle, everywhere except in the labor unions, may yet spread to the east. Our architecture has done it, so why not our tolerance?

• *FRESH AIR HOUNDS*

Proper ventilation on buildings is essential to good health but there is a limit, or should be, to all things. There is a sizeable group of pseudo health builders whose hue and cry has been "More air, more air" until the number of openings in walls has begun to weaken structures. Almost any day now you can expect a demand for ventilator windows in picket fences. Which, after all, would be only one step removed from the explanation of a cow puncher I was with in Arizona. He had pulled his bed roll from the best spot in camp, about three feet from a three strand barbed wire range fence. I asked him why and he said, "This here fence cuts off all my air."

• *THE OLD FASHIONED CONTRACTOR*

The attitude of the present day contractor contrasted with that of the old fashioned type brings out in relief quite a few of our troubles. In former days once the contractor had been awarded a job on the basis of good work throughout, he began figuring how he could do the best possible work for the money. He cooperated with the architect, offered suggestions, and discussed materials with both the architect and the inspector, if there was one, for jobs in those days needed very little inspection. The contractor's thoughts were centered upon how to turn out the best job possible.

Unhappily the modern contractor too often works in another way. When awarded a job he usually begins to figure on how much money he can clean up on the job and still get by. The only answer to this is constant and capable inspection which runs inspection costs up to where they eat deeply into the architect's fading fee. But there seems to be no alternative until contractors go back to figuring how good a job they can do for a given sum instead of how much money they can make out of it.

• *EACH SHINING HOUR*

With this enforced idleness, now is the time for architects to improve the shining hour. The modernist may feel that it is a waste of time to go back over the Orders, to delve into Saracenic or Byzantine forms, or to trace Mayan and Aztec designs through the ages. For direct, material information to be applied to architecture of today this may be true, but tomorrow things will be different. Anyhow, many will find that browsing among books is a form of relaxation that will slowly bring out a crisp picture that remains dim until such a developer is poured upon it. Here are a few of the books that have given me a lot of reading pleasure:

The Byzantine Achievement, by Robt. Byron.

Moorish Remains in Spain and Other Spanish Books, by M. F. Calvert.

The History of Mosaics, by Anthony.

The Medieval Melodrama, by G. G. Coulton.

But of course you have stored up a list of your own for just such an emergency. War isn't so bad, after all, if the eyes hold out.

• *SPECIFICATION FOR AN IGLOO*

All measurements shall be made at 20° below zero or less.

All structural material shall be pure iceberg ice, free from airholes.

All windows shall be fresh water ice.

Doors shall be grade "A" seal or walrus skin, polar bear hide or equal. All doors shall be hung with hair outside pointing down.

Plaster shall be bank snow free from dead fish, bear claws, walrus teeth or other deleterious substances.

Snow shall be applied over berg ice only, and smoothed with a whalebone trowel leaving a hard, neat surface.

Clean and polish with whale oil all fresh water ice.

No work shall be done after sunrise.

No extension of time will be granted after first day of sun.

LENKURT LOUD SPEAKING TELEPHONES

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LENKURT LOUD SPEAKING TELEPHONES provide simultaneous 2-way loud speaking communication between two or more stations. No "talk-listen" lever keys or switches are used . . . to originate a call it is only necessary to push a button . . . the person called may immediately hear and answer.

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USED CONSTRUCTION MACHINERY INVENTORY TO BE LAUNCHED

A nationwide inventory of used construction machinery to make it available for war production has been authorized. The survey will be carried out by the used construction machinery section of the construction machinery branch, H. O. Penn, chief.

A construction machinery specialist will be appointed for each of the WPB regional offices and will be in charge of the inventory in that region. Inventory cards will be mailed to each owner of such equipment for a complete listing. Information sought will be the kind, type, size, condition, manufacturer, serial number, model number, year manufactured, year purchased, type of power, attachments, estimated costs of repairs, sales price (as is) and other pertinent data for each piece of equipment owned.

It is estimated by the branch that there are more than 500,000 pieces of vitally needed construction equipment throughout the country, many of them not now in use, or used but little. Tracklaying tractors, cranes, shovels, draglines, pavers, mixers, scrapers, motor graders, pile drivers, compressors, and auxiliary mounted equipment are in urgent demand. Many of these tools in the hands of townships, counties and municipalities are used for only a few days a year and could be kept busy all the time for war construction.

This survey of 400 established shops shows there are more than two million square feet of shop space available, 3,000 skilled repairmen and some 13 million dollars worth of repair parts in inventory.

BULLETINS ON POST-WAR RECONSTRUCTION

At the session of the seventy-fourth annual meeting of the A.I.A. three definite post-war programs were offered:

1. The Hansen-Greer Plan
2. The Urban Land Institute Plan
3. The F.H.A. Handbook Plan

Many inquiries have been received from architects who attended the session for more definite information on the three plans listed above. Sources where that information can be obtained are given here.

(1) The Hansen-Greer Plan.

A pamphlet outlining this plan may be obtained from the National Planning Association, 800 21st St. N. W., Washington, at 25c per copy.

(2) Urban Land Institute Plan.

There are two bulletins of interest

A Proposal for Rebuilding Blighted City Areas.

Outline for a Legislative Program to Rebuild Our Cities.

These pamphlets can be obtained from the Urban Land Institute, 1737 K St. N. W., Washington.

(3) F.H.A. Handbook Plan.

A Handbook on Urban Redevelopment for Cities in the United States (November, 1941) F.H.A. Form No. 2389, U. S. Printing Office, Washington, D. C., 15c.

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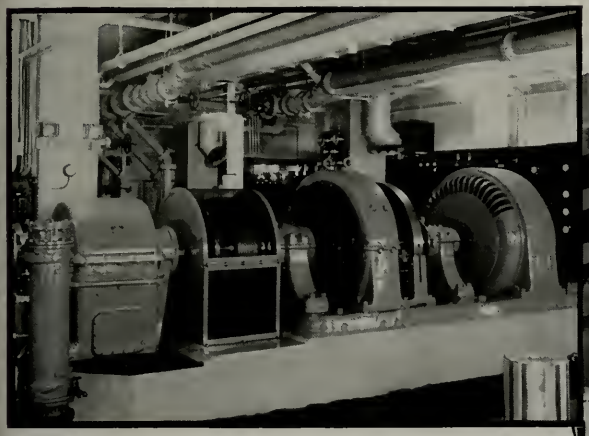

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For walls and ceilings. A tough, durable, glossy finish, works easily under the brush, with superior hiding ability and extremely high light reflectivity. Especially recommended, too, because under ordinary conditions Fullerite does not after-yellow. May be used on wood, plaster or concrete surfaces.

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Count on Fuller for these needs, too—barrel paints, floor finishes, specialized roof paints, rust inhibiting paints, tank paints.

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PRE-COLUMBIAN EXHIBITION AT DE YOUNG MUSEUM STILL ON

The great exhibition, "Arts of America Before Columbus," currently on view in the de Young galleries, Golden Gate Park, will remain until the 24th of August. The show which was brought from the Santa Barbara Museum where it was displayed prior to its San Francisco "premiere," now contains the added attraction of a very rare and recently discovered document of pre-Spanish origin, the Codex Fernandez Leal.

This ancient picture-writing tells in colors almost as vivid as when applied five hundred years ago the history and wanderings of an Indian tribe which migrated from Guatemala into the valley of Mexico. The Codex was finally found in a San Francisco bank vault by Dr. John Barr Tompkins, Research Fellow in Anthropology at the University of California, who had been on its trail for several years. Very few of these valuable documents are in existence at this date, and the Codex Fernandez Leal is the only one that can be seen in the United States. Therefore it adds a thrilling touch to an otherwise most noteworthy exhibition of the arts and crafts of the inhabitants of the American continent before the days of its discoverer.

North, Central and South America are represented in the ancient cultures of Inca, Maya, Olmec, Mixtec, Toltec and Totonac in forms as diversified as fine filigree jewelry, crude stone sculpture, combined wool and cotton weaves and smoothly carved jade masks. This magnificent exhibition, one of few of its kind to be shown in these parts, gives a background to contemporary arts of the Pacific Area and affords a stimulating comparison to the Egyptian, Negro and other primitive cultures, as well as to the highly modern of the plastic arts. The show should be a "must" to all attentive art admirers, student and connoisseur alike.

LIMESTONE HEAD, CHAMELICON VALLEY, GUATEMALA

This impressive example of ancient American art is one of the great stones removed from the Guatemalan jungle by the Eldridge R. Johnson Expeditions of the University of Pennsylvania Museum. They remain the property of the Guatemalan Government. In the Exhibition of Arts of America Before Columbus at de Young Museum.

DE YOUNG OFFERS TWO "WAR POSTER" SHOWS

Opening the first of August, the de Young Museum, Golden Gate Park, is sponsoring two excellent exhibitions of war posters, one circulated by the Museum of Modern Art, the other loaned by the American-Russian Institute.

A large assortment of current "allied" war posters—posters from England, France, the Netherlands East Indies, India, Canada, Russia, Australia, China, the United States—and Spain—is included in exhibit. The posters, combining techniques all the way from the hackneyed illustrations of 1917-18 to the most abstract in modern advertising design, have been assembled in order to demonstrate the variety of techniques available to the designer today, as well as to show the types of posters issued in various countries since the outbreak of the war.

The very best, and a few of the worst for comparative reasons, are shown in this display of one of the most important instruments of government propaganda today. Naturally the majority are made in the United States, with England and Canada running close seconds. But the few from France who, prior to her fall, led the world in modern poster design, and the four from the Spanish Civil War, which conflict has so far produced the most moving and effective posters of the whole struggle against the Axis, along with the contributions from other "allied" countries, give as excellent a sidelight into the poster field, both as an artistic medium and as a strong propaganda weapon, as can be found.

Through the kindness of the American-Russian Institute of this city, the de Young Museum has been lent a group of **Anti-Nazi Posters** made within the Soviet Union and recently sent over to the United States. They are for the most part in the form of caricature and cartoon, although some of them carry a punch as strong as any in the companion exhibit, **War Posters Today.** Some show the symbolic annihilation of the fascist "beast"; others tell vividly what happens to individual fascists on Soviet soil. Some need no text, but those that do usually have it in verse form, both artist

and poet working closely together in the execution of the poster.

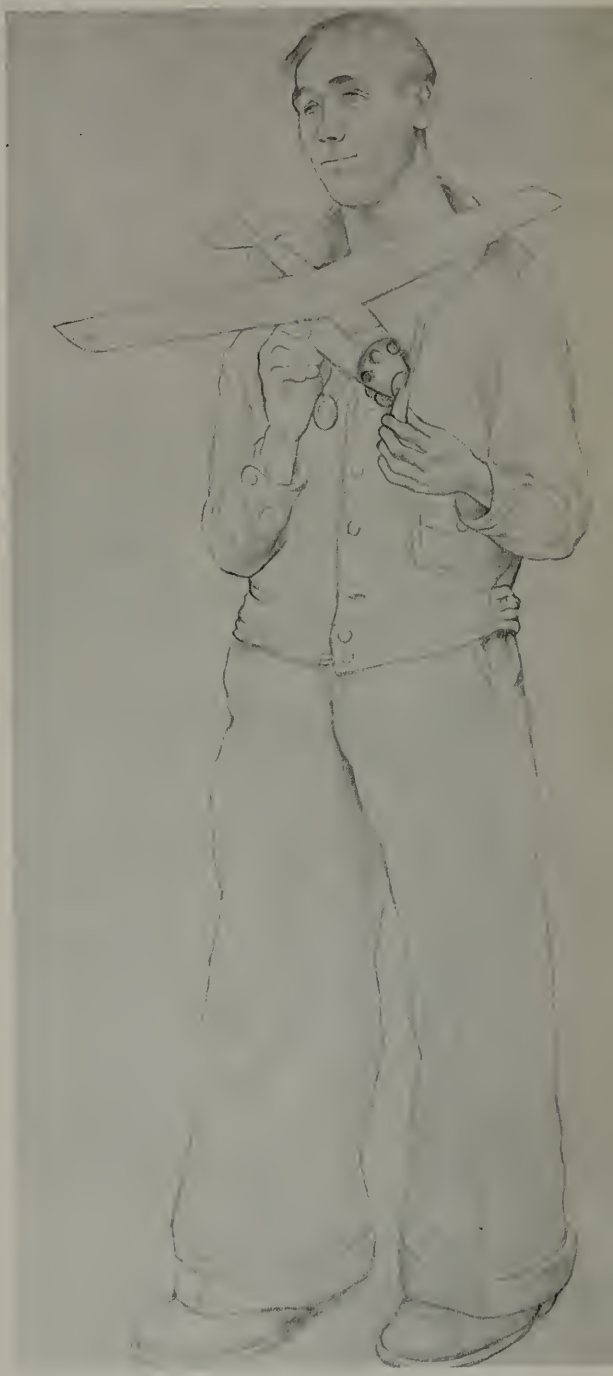
Immediately after the Reichswehr attacked the Soviet Union, Russian poets and artists formed special war-poster workshops and started creating posters and cartoons to bolster and sustain the morale of the Soviet people. The results of this combined effort are at once naive and highly sophisticated. They ridicule and point fun at the "Aryan" invaders in a style as direct and bold as the entire Soviet program itself. But the themes are greater than the instrument of caricature and ridicule: serious attempt is made to invoke pathos and heroic resolution to spur the people on the military and economic fronts to greater effort. Both types of posters are well illustrated in the present show.

These Soviet posters will remain up until the end of August, at which time they will be supplemented by newer ones which have only recently arrived in the United States.

ART OF MEXICO AND CHILE IN CONTRAST

Diego Rivera, modern Mexican master whose paintings, politics, and pranks have made him an international figure, is represented in the San Francisco Museum of Art permanent collection by many pencil and brush drawings, some watercolors and several oils—one of the best museum collections of his work to be found in this country. In 1931 Rivera came to San Francisco to paint two murals; one is in the Stock Exchange and one in the California School of Fine Arts for which the illustration "Boy Holding an Airplane Model" is a preliminary drawing. Rivera undoubtedly was a strong influence in the work of many San Francisco artists. The great interest in mural decoration which has characterized the art of this region during the past few years was given impetus by his stay here.

Unlike Rivera's art which reflects the simple, earthy quality of the Mexican Indian and the Mexican land, much of the art of South America shows little feeling for these elemental qualities. The large and official exhibition of Contemporary Chilean art opening at the San Francisco Museum of Art August 14, will disappoint if many expect the exotic or primitive. Chile has for too long had direct contact with Europe—France in particular—to produce an art which does not show that influence. All her Colonial background was early destroyed by earthquakes which eradicated any strong art trend in that direction, consequently Chilean art is one of high technical facility with a preoccupation of the beauty in light and color of the Chilean country side. The collection of over 150 drawings, paintings and sculptures by 60 outstanding Chilean artists promises to be one of the peak attractions for the Museum this year. The exhibition will close September 13.



"BOY HOLDING AN AIRPLANE MODEL"

A preliminary drawing by Diego Rivera, at San Francisco Museum of Art.

ORIENTAL MATERIAL ON DISPLAY AT DE YOUNG'S

On Sunday, August 9th, the second exhibition of Oriental material donated recently to the de Young Museum by Miss Katherine Ball went on display. Continuing the East Indian theme (her first exhibition concentrating on cotton textiles from that region), this show stresses silk fabrics of the East Indies. The examples are saris of many colors, some of them embellished with gold bullion, and forming an harmonious collection of the materials which form many Indian women's costumes.

In addition to the fabrics, unusual Hindu and Islamic miniatures collected during Miss Ball's year in India are shown. These miniatures, in the form of paintings, are both ancient (using the Maharajah theme) and modern, a group comprising 20th century art in that form, some Persian, other Hindu.

"PAINTINGS ON AND OFF THE POST" AT DE YOUNG'S

"Paintings On and Off the Post," by Privates David Hammer and W. H. Yeisley are being shown now at the de Young Museum. You'll like this show immensely.

M. H. DE YOUNG MUSEUM SPECIAL EXHIBITIONS

Arts of America Before Columbus

(500 B. C.—1500 A. D.) Through August 24th

Anti-Nazi Posters by Artists of the Soviet Union, loaned by the American-Russian Institute, through August.

San Francisco Architecture before the Fire, through August.

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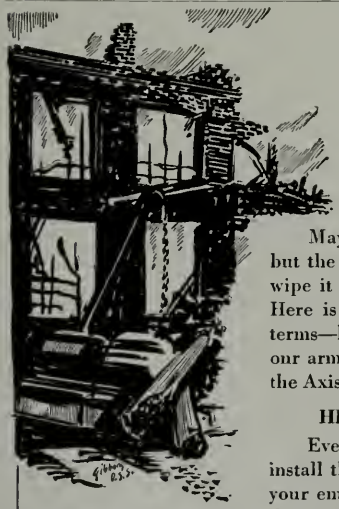
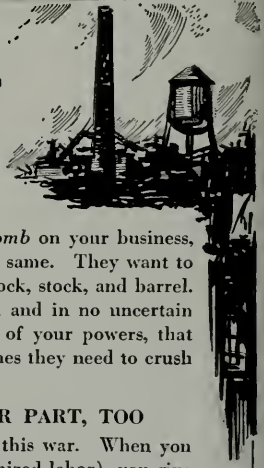


TARGET FOR TONIGHT

. . . Your Business?



Maybe they won't actually come and drop a *bomb* on your business, but the Axis war lords have their eye on it, just the same. They want to wipe it out as a competitive force—or take it over lock, stock, and barrel. Here is a threat that you can reply to *now*, today, and in no uncertain terms—by buying Defense Bonds to the very limit of your powers, that our armed forces may have the guns, tanks, and planes they need to crush the Axis *once and for all.*

HELP YOUR EMPLOYEES TO DO THEIR PART, TOO

Every American wants the chance to help win this war. When you install the Pay-Roll Savings Plan (approved by organized labor), you give your employees that chance. For details of the Plan, which provides for the systematic purchase of Defense Bonds by voluntary pay-roll allotments, write: Treasury Department, Section S, 709 12th St. NW., Washington, D. C.

Make Every Pay Day **"BOND DAY"**

Save with **U. S. *Defense* BONDS ★ STAMPS**

This space is a contribution to Victory by

ARCHITECT AND ENGINEER

SOURCES OF INFORMATION ON HOUSING
(Compiled by Catherine Bauer Wurster)

Wood, Edith Elmer. Introduction to Housing: Facts and Principles. USHA 1940 (now FPHA). Still available from GPO at 30c.

Survey Graphic, February 1940. Homes number. Available from S. G. at 112 East 19th St., NYC, for 40c. Articles by Mumford and E. E. Wood.

Bauer, Catherine. Citizens Guide to Public Housing. Vassar College 1941. Available from California Housing and Planning Association for 60c.

American Public Health Association, Committee on the Hygiene of Housing. Housing for Health. 1941. Available from APHA, 50 West 50th St., NYC, for $1.00.

National Resources Planning Board. Housing: The Continuing Problem (pamphlet edition, June 1940).

Temporary National Economic Committee on the Concentration of Economic Power (TNEC). Final Report of the Executive Secretary. 1941.

Mumford, Lewis. Culture of Cities.

Post, Langdon. The Challenge of Housing. 1938.

USHA (now FPHA). Handbook for Research on the Social Aspects of Housing. 1941.

Reed, W. V. and Elizabeth Ogg. New Homes for Old. 1940. Foreign Policy Association, 8 West 40th St., NYC, 25c. Pamphlet primarily on European housing experience.

Farm Security Administration. Miscellaneous publications including: The Problem of Rural Housing by Will Alexander (mimeo.); Migrant Farm Labor (pamphlet); The Farm Security Administration, May 1, 1941. (Ill. pamph.)

Survey Graphic. Article by Clarence Stein.

NRPB. Better Cities, pamphlet by Charles Ascher.

National Planning Association. Urban Redevelopment and Housing. Planning Pamphlet #10. 25c.

Federal Housing Administration. Handbook on Urban Redevelopment for Cities in the U. S. 1941.

Public Housing, Vol. 3, No. 6. (FPHA mag.)

National Committee on the Housing Emergency. Recommendations, 1942.

National Resources Planning Board. After the War—Full Employment. Pamphlet by Alvin Hansen, January 1942.

National Planning Association. Guides for Postwar Planning. Planning Pamphlet #8. 25c.

Survey Graphic. Articles by Mumford, Coyle.

Agenda, Rural issue, June 1941. Article by Walter Packard.

New Republic (forthcoming). Article by C. Bauer on the Columbia Basin project.

Osborn, F. J. Overture to Planning. Rebuilding Britain series, No. 1, 1942.

Scott, Mel. Cities Are for People. Pacific Southwest Academy, 1942.

Misc. pamphlets of the San Francisco Housing & Planning Association.

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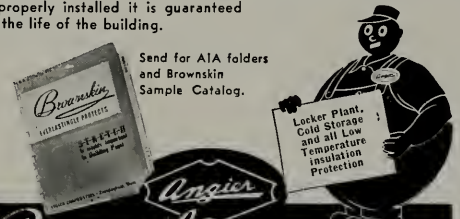

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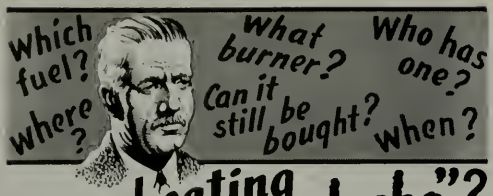

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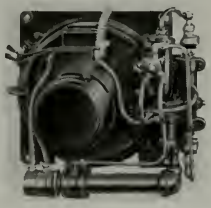

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The munitions plant, located somewhere on the Pacific Coast, and illustrated in this issue, pages 36 to 40, is one of many of Uncle Sam's victory projects for which the reinforcing steel and building specialties have been furnished and installed by —

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JOBS FOR ARCHITECTS

Editor, Architect & Engineer,
San Francisco, California.
Dear Sir:

In the July, 1942 issue of the "Architect & Engineer", on page 49, there is a list of "Architects in Service." At the head of the article the following statement is made:

"Any information as to the activities of other members or correction of any incorrect statement will be welcomed by the Editor."

Accordingly we are listing herewith the architects who are working for us and who are rendering splendid service.

Irving Morrow is in charge of the preparation of specifications for all contracts.

Albert H. Larsen is in charge of the preparation of architectural plans and details for many of our structures.

Wallace H. Hubbert is in charge of the preparation of architectural plans for some of our structures.

George E. Ellinger of Oakland is rendering valuable assistance in the preparation of architectural plans and details.

E. R. Comstock is also engaged in the preparation of architectural plans and details.

Mario J. Ciampi is our Chief Statistician and is in charge of the statistical and cost assembling data for our construction work.

Ralph Berger and **Earle B. Bertz** are rendering valuable assistance to Mr. Ciampi.

Gwynn Officer of Berkeley, in addition to preparing architectural plans and details of structures, has been in charge of our real estate department.

Abe Appleton, who was formerly working with us, is no longer connected with this organization.

The way in which the above architects have worked into our program and assisted in the development of our Alameda shipbuilding facilities has been quite encouraging. They, as well as many others, are to be commended for their efforts in this war emergency progra

Very truly yours,
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WHAT *is the practical and patriotic thing to do about vacations this year? Are they to be suspended for the duration?*

DEFINITELY NOT! Uncle Sam endorses and recommends proper rest and recreation as an essential investment in reconditioning for greater war effort.

ALL RIGHT. *Suppose you are one who doesn't want to wear out a lot of tires this year driving long distances on a vacation trip.*

IF SO, take your vacation in Southern California, where hundreds of fine hotels, resorts and play places are within short driving distances. If you want to leave your car at home.

AW, GEE! *I live here. What fun can I get out of a vacation in my own "back yard"?*

YOU could spend a lifetime of constant travel in Southern California without exhausting its marvelous opportunities for recreation, rest, relaxation, play and all-out FUN. Where else, within a relatively small orbit, can you find mile-high mountains with sapphire lakes and streams, whispering pine forests, sparkling beaches, romantic islands, bubbling mineral springs and orange groves—where else a more ideal climate? Where can you find a greater galaxy of sports to choose from?

OR, what about the unique experience of a "city" vacation this year? Move away from the house and housekeeping worries and spend a week or two at one of our fine metropolitan hotels. A thousand servants are at your beck and call. Many hotels offer facilities for dining, dancing, tennis, golf, swimming, badminton, sun-lazing, and a host of other sports and social pastimes.

THAT *sounds great . . . but, in the face of the rising costs of living, I don't think I can afford a vacation this year.*

YOU can affort and *must* have a vacation. Hotels in Southern California are continuing their rates at pre-war levels. There is a hotel or resort in Southern California for every income and every budget. Eliminate high transportation costs and you will find that a Southern California vacation costs you no more than living at home. And it's false economy not to give the "human machine" its needed rest and relaxation.

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WHAT TO READ

PLASTICS, by J. H. Dubois. American Technical Society, Publishers, 58th and Drexel Avenue, Chicago, Ill. Price $3.

A simplified presentation of the manufacture and use of the important plastic materials and products, together with tables of their properties and the basic design information required by architects, engineers and designers.

The author is associated with the plastics department of the General Electric Company. The book is a practical treatise of the subject, presented in a manner to be most helpful to actual users of the plastics, those in need of basic information on these materials but who cannot afford the time required for detailed study. It is not only an excellent reference book for designers but is written to serve as a textbook for schools.

* * *

HOW TO PLAN A HOME, by Gilbert Townsend and J. Ralph Dalzell. Published by the American Technical Society, Drexel Avenue and 58th Street, Chicago, Ill. Price $4.50.

Years of actual experience and training enabled the authors to present a book of real usefulness to people who are interested in House Planning. Apprentices and students especially will find it highly informative. There are numerous illustrations and drawings, and in presenting these drawings the authors show you how such plans are made. The book tells how to properly lay out a floor plan in keeping with the exterior design, discusses architectural styles but makes no attempt to qualify you as an architect. It gives you excellent information about designing and building which should be valuable if you are planning a professional career or if you are already engaged in the home building field.

* * *

DESIGN OF MODERN INTERIORS, by James Ford and Katherine Morrow Ford. Architectural Book Publishing Co., Inc., 112 West 46th Street, New York, N. Y. Price $5.

While residential design for some years to come is likely to be restricted largely to low-cost housing and furnishing, the natural aftermath of the war, the authors preface the work by explaining that their original purpose was to present with illustrations the contemporary phases of a significant culture movement. To a degree these plans have been carried out (there are 324 illustrations) in the belief that "the catholicity of the collection of pictures, in combination with the text, will serve to show the status of the interior design as of 1942, will suggest future trends and directions, and at the same time serve as a basis for judgment and criticism."

It is gratifying to note that the authors have found sufficient merit in the work of our California architects to warrant a generous showing of interiors. Names familiar to Architect and Engineer readers include William W. Wurster, Mario Corbett, John E. Dinwiddie, Garner A. Dailey, Albert H. Hill, Richard J. Neutra.

All told, the work of some 124 architects and designers is shown, grouped for convenient study under such headings as: living rooms, dining rooms, bed rooms, bars, entrance halls, libraries, sun rooms, terraces, fireplaces, furniture, etc. An important section illustrates the interrelationship of rooms and the best organizations of total space. Statements by some of the architects and designers explain the choice of colors and materials.

* * *

INDUSTRIAL CAMOUFLAGE MANUAL, prepared for the Industrial Camouflage Program at Pratt Institute, Brooklyn, N.Y., by Konrad F. Wittmann, A.I.A. in collaboration with the faculty. Published by Reinhold Publishing Corporation, 330 West Forty-Second St., New York, U.S.A. Price $4.00.

This is the first published work which attempts to relate existing knowledge concerning camouflage to the industrial problem. It is a comprehensive work covering all phases of the subject. The aim of the book is to point out the necessity for, and the ways and means of protecting vital industries and utilities by camouflage. The subject is a vital one in many parts of the country. The book covers the ground in good fashion and is well arranged. Written in outline form with all points explained by illustrations, it cannot fail to be valuable to the architect, engineer, landscape engineer or other designers who wish to turn their talents to industrial camouflage.

The Manual contains much of the essential information about bombing practice, observation and aerial photography which is necessary to augment the training of designers in general. Greater emphasis should perhaps be placed upon the fact that in industrial camouflage, an area scheme is necessary, that objectives and reference points be considered in their relation to each other and to military installations and thus attention should be called to the necessity of working through the O.C.D. as a central controlling agency which will coordinate the activity of the various designers. However, this is a fact which all people in industrial camouflage will soon realize and the book stands as a ready aid to the designer.

—H. L. V.

* * *

ESSENTIAL LESSONS IN ARC WELDING. Published by Hobart Trade School, Inc., Box EW-22, Troy, Ohio. Price 75 cents.

This is a reprint of Chapters XIII to XXI, inclusive, of a 516-page textbook, "Practical Arc Welding." The complete book is sold for $2. The Part Two reprint is intended as an introduction of the subject for beginners with preliminary instructions to students sincere in their desire to learn this trade in an efficient, thorough manner.

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DEWEY MONUMENT PRESERVED BY THE BUILDERS OF SAN FRANCISCO'S UNDERGROUND GARAGE—A SILENT REMINDER OF THE PARK OF YESTERYEAR

Moulin

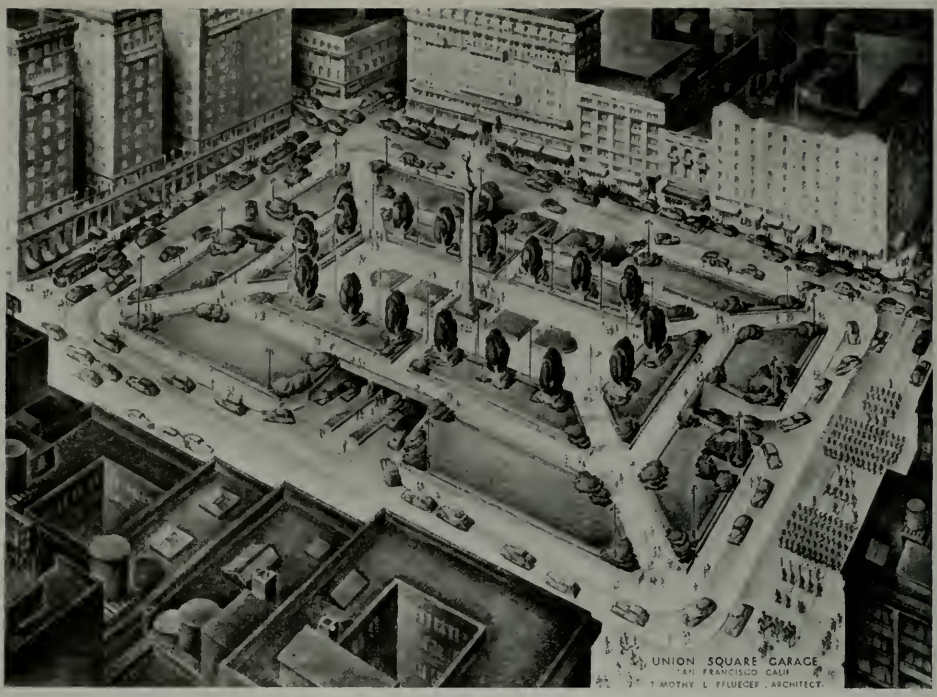
THE UNION SQUARE GARAGE SAN FRANCISCO

By S. A. CARRIGHAR

"A four-story building underground" was the catch-line used in promoting San Francisco's Union Square Garage. It was one of those simplifications for the public, suggesting a structure like any other except that it was buried. But professional builders realize that putting a garage beneath a park brings up a number of unprecedented problems. Not only in the West, but everywhere that traffic swirls above publicly owned subsurface space, the details of San Francisco's project have been awaited with keen interest.

Credit for initiative to get the project going belongs to the property-owners of the city's "Triangle District." This district is a circumscribed hub, a few blocks between Market and Sutter Streets where there are concentrated 17 large retail stores, 11 office buildings, 88 hotels, 15 clubs and 7 theaters. The intense activity of the area threatened to defeat itself because of insufficient parking space. The capacity of nearby garages scarcely would serve the patrons of a single store.

Inviolate in the center of the district was Union Square, a naive little park, 114,000 square feet of lawns where office-workers lunched on the sunny grass and fed a resident flock of pigeons at the base of the Dewey Monument. The property-owners had a vision. To multiply the block of



Union Square Garage as visualized by the architect before improvements were started. Note fine detail, including buildings

open space by four would all but solve the district's parking problems; a four-story building under the Square could park as many cars as line the curbs of 108 city blocks. That vision got the property-owners together and held them together through two years of discouraging conferences in San Francisco, Washington and New York.

GARAGE TO BE CITY OWNED EVENTUALLY

The city's right to lease the Square's subsurface area to a private corporation was established by test litigation before the California Supreme Court. A corporation was formed. At present it rents the space, for which it pays $5,000 a year plus about $13,000 annually in taxes. But eventually the garage is to become municipal property—after an estimated period of 25 years, when proceeds are expected to have paid off an RFC loan of $850,000 and $600,000 advanced by private investors.

With the organization and financing settled, the project became the engineers'. Among their problems, three stood out: bulkheading, ventilating, and the designing of a roof to support a park.

The entire block bounded by Geary, Stockton, Post and Powell Streets was excavated. Eight borings determined that the subsoil was composed almost entirely of sand, that excavation could go down 80 feet without encountering water except a little toward the corner of Powell and Geary. The block tilts; at the Powell-Post corner it is 24 feet higher than at Stockton and Geary. Therefore the depth of excavation varied, but it averaged 48 feet.

The bulkheading called for steel piles braced by pairs of 12 x 12-in. timbers anchored against the second row of concrete column-footings (the footings to be put down before excavation was complete). The steel piles were placed 3 ft. outside the building walls. Their maximum length was 54 ft. Steel shortages made it necessary to use whatever steel could be secured, which ranged from 10-in. 53-lb. H sections to 21-in. 59-lb. WF beams.

View showing completed project (photo August 15) taken from same point as drawing on opposite page

Moulin Photo

For braces, single-stick timbers were used in lengths up to 60 ft. The upper timber in each pair braced the steel pile near the top, the other near the bottom. Diagonal braces were added to stiffen the pairs of timbers, being so spaced that they would come into the clear area between the floors. Where the 12 x 12-in. timbers projected through the floors, reinforcing bars were bent around them in most cases, although some bars were thrust through holes bored in the wood. The slabs surrounding the timbers had extra reinforcement. Timbers were sheathed with fibreboard while concrete was being poured. After they were sawed out, the concrete floors were patched.

A WINDOWLESS BUILDING

The ventilation, though important, was not a complex problem. The garage has been called a "windowless building," as well as an "underground building," implying that some of its features, such as the ventilation, are similar to those of the windowless factories above ground. But the garage is not air-conditioned. Its ventilation is achieved by a mechanical exhaust system in which fans withdraw the foul air through ducts and expell it to the outside via four pylons. The fresh air to replace it comes down the four entrance ramps.

Because of the presence of waste gases from automobiles in a building like this, a San Francisco city ordinance requires that the air be changed at least six times per hour. The system in the Union Square amply meets the stipulation. For each of the pair of pylons at the Powell and Stockton Street entrances, three fans have been installed, the six fans totaling 180 horsepower, with a capacity of 390,000 cubic feet of air per minute. This displacement of air assures that even during rush hour periods the waste gases from automobiles will be removed from the interior.

Bulkheading and ventilation called for ingenuity, but the greatest challenge to the builders was at ground-level, rather than below ground. When they came to the roof, they

The 48-foot excavation, encircled by tall buildings, was accomplished without cave-in. Column footings, placed before excavation was complete, anchor timber braces

Detail of paired timber braces for steel piles. The 24-foot variation in street levels (between corners at upper right and lower left) determined lengths and angles of braces

Most reinforcing bars were spread around the timber braces; a few pierced them. Adjacent slabs had extra reinforcement. Fiberboard sheathed the timbers during pouring. 300,000 sq. ft. of sisal fibre reinforced paper used to cure and protect the concrete

Union Square is 24 feet higher at the Powell-Post corner than at Stockton and Geary. The rise was gradual in the old park; in the new, a large level plaza necessitates this abrupt slope along Geary.

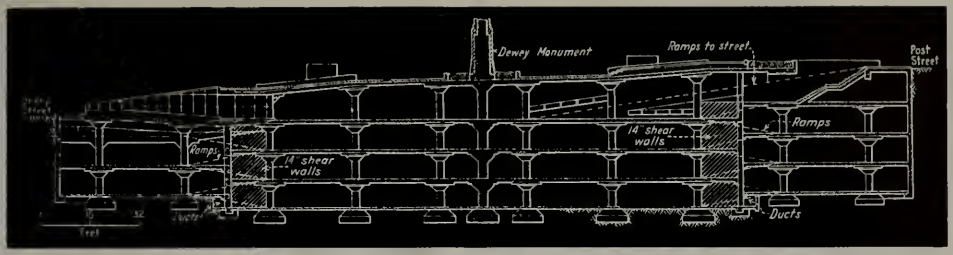
oor center, showing brilliantly lighted parking area

Photographed by S. A. Carrigher August 20

This picture gives you a fair idea of garage floor space. Second and third floors are shown

Irregular shaped columns, some 50 in number, serve as floor supports, formed in metal and installed by the Steel Form Contracting Company

Photos by Carrigher



CROSS SECTION SHOWS RELATION OF MEZZANINE FLOORS TO MAIN FLOORS, RAMPS AND SHEAR WALLS.
Walter L. Huber and Edward M. Knapik, Structural Engineers

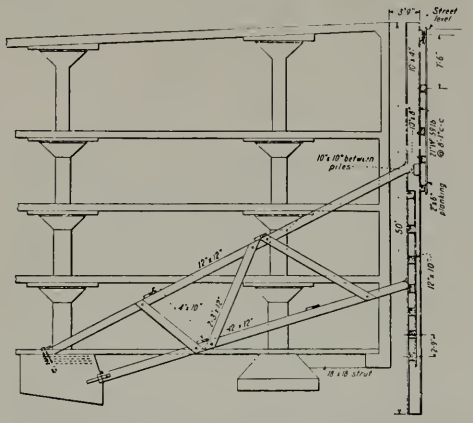
no longer were building a garage—they were building a park. An agreement between the corporation and the San Francisco Park Commission called for the restoration of the lawns and trees and monument; for certain other improvements that would insure a park "even lovelier than before." The corporation must spend at least $100,000 to create the park, in addition to the cost of the building proper.

ROOF BECOMES A PARK

The tilt of the Square made it necessary that the roof be warped, and that the warping simulate the contours of the landscaped area. The new contours do not reproduce the old exactly. Originally the Square was a sandy bluff, which had been carved down with more spontaneity than design. In places the lawn sagged. Its slope to the peak at Post and Powell Streets seemed reluctant. A nearly level plaza now surrounds the Dewey Monument, as it did formerly, but the new plaza is much larger than the old. Therefore the slopes on each side of it must be steeper to take care of the 24-foot rise. Citizens who resent change have spoken their minds in the newspapers about the "mound" along Geary Street. Actually the base of the monument is exactly at the same height, in relation to the street levels, as it was before.

The old dirt paths were casual; in the new Square the paths are paved and they radiate in a regular design, their grades broken at intervals by steps. They are outlined, as is the park itself, with granite curbs. The new trees are set in rows of concrete boxes, 8 ft. square. What the park has lost in shabby charm it has gained in orderliness.

The handling of the monument may set a



Timber braces for the steel piles and steel tierods to resist vertical component of thrust

precedent, since any building placed beneath a public park is likely to have to support some statuary. Union Square's Dewey Monument is a 350-ton granite shaft topped by a figure of Victory. It was erected in 1903, and the 1906 earthquake caused considerable shifting in the cylinders that compose the shaft. The garage-builders have strengthened the monument against future seismic disturbances. While the granite shaft was down, the cylinders were hollowed out; when replaced, they were fitted over a core of reinforced concrete. At the base of the monument, the core becomes a supporting column uniformly 3 ft. in diameter all the way down through the building. (Other columns are 22 in. in diameter at the top, 30 in. at the bottom.) The shaft is centered on a roof panel 33 ft. 9 in. x 37 ft., which is 7 in. thicker than other roof slabs, being 19 in. thick instead of 12 in. as over the rest of the roof.

DETAIL OF SIGNAL SYSTEM
There are 15 loud speaker telephones installed by Frank I. DuFrane Co., Inc.

ONE OF 25 VENTILATING SCREENS
Leland & Haley, Mechanical Engineers

CLOSE-UP OF HUGE VENTILATING FAN (one of six), made by Buffalo Forge Co., Moore Machinery Co., representatives.

Several thousand people sometimes assemble in this single city block, for the plaza surrounding the monument has long been a gathering place for outdoor speeches, and band concerts are held there almost daily. Other factors in the roof-load include 16 trees, each weighing between three and four tons, the new granite curbs, and the overall covering of loam varying from two to three feet deep. The total load was calculated to average 500 lbs. to the square foot.

The foundation for the loam must protect both roof and the health of the soil. Its first layer above the reinforced concrete was an asphalt and felt membrane with a 2 in. protective cover of concrete under a drainage surface of crushed rock 6 in. thick. Drain tile were laid much as they are beneath a football field, in rows about 6 ft. apart. A sprinkler system was installed in the loam. In the old park was much weather-worn shrubbery. The San Francisco Park Department, which will maintain the restored Union Square, plans many flower beds, where the species will be replaced with the seasons and present a perpetually blooming spectacle. It is believed that excellent growing conditions have been provided for these flowers as well as for the lawns.

UNIQUE ARRANGEMENT OF FLOORS

The garage design is distinguished for several features beside those related to its subterranean location. One is the staggered arrangement of the floors. A central section of four stories, running through from Stockton to Powell Street, is bordered along Post and Geary Streets by sections in which the floors are in mezzanine relation to the central floors. No single ramp, therefore, must rise more than a half-story, or 4 ft. 9 in., since the distance between floor levels never exceeds 9½ ft. in any section. No ramp is warped, but at two corners of the building (Post-Stockton and Stockton-Geary) the floors themselves warp up from the main section to the next higher mezzanines.

The floors are 10 in. thick. Coming so close together, they are well able to absorb the thrust from the four side-walls. However, the

THE UNION SQUARE GARAGE

- is 48 feet down under—equivalent to a 4 story building.
- provides parking space for 1700 automobiles.
- financed by public subscription ($600,000) plus an $850,000 RFC loan.
- when loans and subscriptions are retired by income from operation, the garage becomes municipal property.
- the holding corporation will pay the City of San Francisco an annual rental of $5,000, plus $13,000 per year taxes.
- to preserve the Dewey monument in center of park it was necessary to use 'quake resistant design.
- the central column of the monument has been hollowed out to reduce weight of the roof.
- in case of an air raid the garage may be used as a public shelter. For this reason the government released priority materials to complete the structure.
- the 12 inch concrete roof slab is overlaid by a minimum 2 feet of top soil for landscaping. The tree boxes have a 5 ft. soil depth.

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staggered floor design of the building made it necessary to provide for transmission of the thrust from mezzanines to the floors of the central section. The load is transferred chiefly by the ramps, and by a series of vertical panels, 14 in. thick.

The spacing of the columns gives a more generous area than usual to individual car-stalls. All told there are 160 of these columns, arranged in bays 24 ft. 3 in x 27 ft. 5 in. The metal forms for the round columns were supplied and erected by the Steelform Contracting Company. The irregularities and sloping floors complicated the work of installing the special equipment for the columns. Ramps are of the concrete joice type and were formed in metal. In each bay are three stalls, the stalls being somewhat wider than the traditional 7 ft. 2 in. The extra stall-width will help eliminate the banging of car doors against adjacent cars—or provide for the possibility of wider models when cars again are manufactured.

The garage will accommodate 1700 cars, all but 200 of them to be parked on the lower floors. Most of the space on the top floor is reserved for the waiting rooms and rest-rooms, offices, sales room for accessories, and the area for servicing of the cars. Access between floors is by ramp and stairway, and for the attendants, slide poles and man-lifts.

The designers of the building wished to make it possible for motorists to leave street traffic and enter the garage, also to exit,

GAS, SPEED AND BACKFIRE

Who thought of the Union Square Garage first? Claims now go back to "about 1902." When they pre-date the invention of cars, the controversy probably will be given up.

• • •

The floors are lettered instead of numbered. Top floor is A, bottom D. Mezzanines are AM, BM, CM, DM—BM, for instance, being the mid-floor ABOVE the B central-section floor.

• • •

All the lower central floors have mezzanines along both north and south sides. But there is only one AM—the mezzanine under the park's high Post Street corner. Cars are serviced at the Powell Street end of it. Offices and lounges are in the center, under the Post Street entrance and exit ramps.

• • •

There are two showers for use of the mechanics who service cars.

• • •

The panelling in all the offices and patrons' lounges is bleached mahogany.

• • •

Taking the monument down, boring out the center, and putting it up again, cost $20,000.

• • •

The old park was a poet's, the new one is a mathematician's. The layout perfectly symmetrical, and formal. San Franciscans are not formal.

• • •

Park-users, sadly remembering odd corners of the old Square that were wildly sweet, will at least be sad while sitting on fine new benches.

• • •

The plaza around the monument, while it looks level, actually has a two-foot rise.

• • •

All ventilating intakes lead straight down to concrete ducts beneath the lowest floor. These connect with vertical ducts at east and west ends of the building, which rise to fan rooms, thence to pylon-outlets.

• • •

The pylons will eventually be shrouded with shrubbery. Why? They are the building's only visible mass and are pleasingly proportioned. Might have been decorated with low relief, intaglio, painted murals or mosaics.

• • •

Electric heating is used in the offices and lounges. A plug for Wesix.

• • •

Metallic abrasive makes the floor on the A level black. Alundum is the abrasive on the ramps. Lower floors are treated with a liquid hardener to prevent the spinning wheels of cars from raising dust.

• • •

Carlton H. Wall, president of the Union Square Garage Corporation, is a member of the San Francisco Planning Commission and knows what he knows about the San Francisco parking situation.

• • •

The garage was an unprecedented problem for insurance companies.

• • •

Considering the complicated times and job, there was remarkable harmony among the workers. Give much credit to the superintendent, Chris Buestad, whose stature is in personality, not inches. His men call him, with affection but respect, THE LITTLE SUPE.

• • •

The 161 pillars have only wheel curbs for protection. Imagination sees them soon banged up.

• • •

The shaft of the monument is 90 feet high.

• • •

The daily newspapers used Tim Pflueger's letterheads plenty to squeeze the building trade for advertising.

• • •

Architectural Forum may run the garage in colors! What colors?

• • •

G. A. Applegarth, veteran architect, worked on plans for the garage when the project was first talked of.

without left-turns or having to break through traffic-lines. With this objective they set the sidewalks back and provided space for an extra inside traffic lane on all of the four streets bordering the garage. In all of the four sides are entrance-exit ramps separate on Post and Geary, single 3-lane ramps on Powell and Stockton. A motorist may leave his car at any one of the four entrances and have it delivered to him at any other. A tunnel under Powell Street connects the service floor of the garage with the lobby of the St. Francis Hotel.

A GARAGE WITH FEMININE APPEAL

One of the most unique features about the garage is intangible—the attitude on the part of its sponsors that a garage may be an attractive place, where attention is given to some of the finer points of serving the public. Perhaps the background of the stockholders has made itself felt; many of them, including Carlton H. Wall, president of the corporation, have had experience in winning trade with color schemes and carpets. They could prove that 85,000 women daily come into the Triangle District to shop, and constitute the largest potential group of garage-patrons. "A garage for women" is enough to set any imagination working.

Decorations of the women's waiting and rest rooms are in delicate colors, and the furnishings are luxurious. There is every invitation here for the woman patron to freshen up after driving downtown, and to make these rooms the place where she meets her friends. She may have her packages delivered here. Garage-owners are working on the possibility of providing a nursery where she can park her children. Another convenience is the private telephone lines connecting the garage with the various department stores. From any of them a patron may call and have her car delivered to the store.

The garage is equipped with 15 loud speaker telephones manufactured by the Frank I. DuFrane Co., Inc., of San Francisco. There are five of these phones on the top floor and ten on the remaining floors. Designated as stations it is possible to call any station from any other station as well as page strolling car owners via loud speakers, of which there are fifty, distributed on the top floor. To originate a call it is necessary only to push a button and the person called may immediately hear and answer, if desired.

The grimmer prospect that the garage might some day be used as a bomb-shelter was thought of two years ago and military experts were called in for their opinion. They agreed that it would be impractical to furnish protection against the heaviest type of explosive bombs without greatly lessening the building's utility as a garage. Experience in England has demonstrated that a large percentage of civilian casualties result not from direct hits but from shrapnel, glass and other scattering debris. Against this danger, as well as incendiary and medium sized bombs, the garage provides a desirable civilian shelter. Other emergency uses have been considered. The electrical system has been designed to carry a greater load than required by the present total of 600 lighting units. A sufficient number of ducts, outlets and sump pumps have been installed so that toilets and other plumbing fixtures could be added in various parts of the building, almost over-night. With air-conditioning, a more ambitious alteration, the garage could be turned into a hospital having greater floor-space than San Francisco's 33-story Russ Building.

For the present, and one hopes for the indefinite future, that floor-space promises much relief for a parking problem that threatened to dislocate many of San Francisco's habits.

Timothy L. Pflueger was the architect, for whom Huber & Knapik were the structural engineers, Leland & Haley the mechanical engineers, and G. M. Simonson electrical engineer. The RFC engineer on the job was Frederic F. Hall. L. H. Nishkian designed the bulkheading for MacDonald & Kahn, the general contractors.

THE POST-WAR CONSTRUCTION MARKET

By S. MORRIS LIVINGSTON

Next to winning the war, post war planning is the biggest and most important job in sight. It will require the best brains of both industry and government.

The post war production of goods and services must offer full employment to those of our people who will want it. The armament program has taught people the tremendous productive capacity of this country if the demand exists. They will insist on a solution of the problem of distributing this large output in peacetime. They will hold that widespread unemployment is the greatest economic waste and must be eliminated at all costs.

If our present economic system and form of government are to be maintained, this problem must be solved in the field of private enterprise. Of our output over the next 12 months, perhaps 60 billion dollars will be war goods. When that market disappears, no public works reserve or other make-work program will be adequate to fill the gap. The successful transition from a war economy and the maintenance of a high level of consumption will require the joint efforts of government and industry and a high order of industrial statesmanship.

The outlines of the problem are beautifully simple even though the solution is not. With full employment, the consumer's expenditures for consumption goods and services would be much greater than we have ever experienced. An even larger increase in the demand for consumers durable goods, and the necessary increases in productive capacity to meet these expanding markets, should absorb for a number of years the relatively large volume of savings to be expected at that level. This is particularly true if a long war builds up a big backlog of deferred demands for all sorts of durable and semi-durable goods.

Given a belief in and an assurance of this market, a concerted effort by private enterprise to produce the required goods and services and to build the necessary increases in capacity would be ample to assure full employment without any more drastic action.

If private enterprise is not willing to act on the assumed existence of this market, and if neither government nor private enterprise is successful in underwriting full employment, then the post war boom is likely to be short-lived. Somehow the individual person or corporation must be given the necessary confidence and assurance that the combined actions of other entrepreneurs and of government will maintain this market.

In suggesting that our analysis should be based on the assumption of full employment, I hope that I will not be accused of starry-eyed optimism. As exponents of the enterprise system, we cannot afford to admit failure before we start.

THE POST WAR HOUSING MARKET

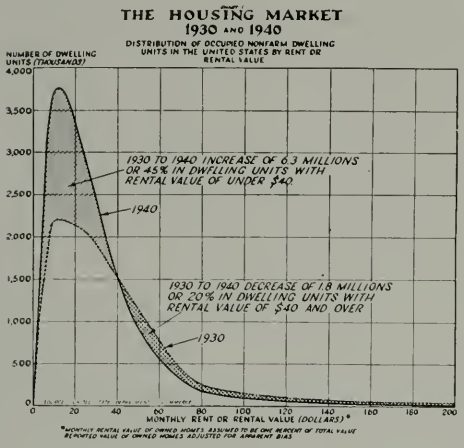
As an indication of the size of the potential market for private construction, and to illustrate the sort of study we think should be undertaken by the members of the Producers Council, I would like to go into some detail as to the influence of full employment on the housing market and indirectly on the demand for new residential construction. You will appreciate that our conclusions are tentative and that we are anxious for any comments and criticism.

This distinction between the market for housing and the market for residential construction is important for our purpose. People have the convenient habit of devoting about the same proportion of their budget for housing regardless of their total income. Families with very high incomes will have much higher savings and taxes but housing will still tend to be about one-fifth of their total outlays on current consumption. Given full employment in a post war year we can approximate the number of

* Condensed from a talk before the Producers Council at the A. I. A. Convention in Detroit, June 23.

families and their income. With some allowance for higher taxes and savings we can estimate the demand for housing. Given the changes in the demand for housing, we can calculate the required new construction.

The result of an increase in the income of the average family can be indicated by the reverse process between the census years of 1930 and 1940.



In April 1930 there were 23.2 million nonfarm households, i.e., the census reported 23.2 million families occupying independent dwelling units. Converting owned homes to a rental equivalent at 1 percent of the value per month, their total annual rent was a little over 10 billion dollars.

When the census was taken in April 1940 a slightly smaller total income was divided among 27.7 million households. The total annual rent was slightly below 10 billion dollars and, with the increase in households, the average rent was only about $29 per month as against $38 in 1930.

The effect of this change is illustrated in Chart 1. Data are taken from the decennial census with some adjustment for what appears to be a bias in reporting the value of owned homes. The resulting curves are only approximate but are sufficiently accurate for our purpose. In spite of a 20 percent increase in the total number of nonfarm households there was a decrease of 20 percent in those occupying a dwelling at more than $40 per month. There was a correspondingly larger increase of 45 percent in those who could afford to pay $40 or less.

We have here a measure of the effective demand for housing on the two dates. It cuts across all of the hypothetical discussion of the kind of houses people ought to live in or would like to have. Most people figure that they can afford to spend about one-fifth of their budget, after taxes and savings, for housing. On the average and allowing for some inertia, this proportion seems to hold almost regardless of income level or of the quality of housing available at that price. With less income per household in 1940, the expenditures for housing declined in almost equal proportion.

The change in the shape of the curve indicates the shift in the effective demand for housing. It is not a measure of the actual deterioration of these structures over the decade. The four million dwellings with a rent or rental value of more than $40 in 1930 which had been handed down to a lower bracket by 1940* can be only partially accounted for by any reasonable depreciation and obsolescence, or by any change in construction costs. They must be explained by the excess of the 1930 supply over the 1940 demand in the higher brackets. Given this excess, competition forced prices and rents down to what people could afford to pay. Consumer income was the pattern for the curve. Competition forced the existing supply of housing into that mold.

This shift in the effective demand for housing was the dominant influence affecting new residential construction between 1930 and 1940. Throughout the decade there was an aggregate excess of supply over demand over most of the price range where new construction could compete with existing dwellings. This was not true for houses with monthly rent or rental value of $40 or less. Hence, the pressure to construct very low cost housing. The fact that there was any construction at all in

* In spite of 2.7 million dwellings constructed during the decade, mostly in this price range, the total at the end of the period had decreased by 1.8 million.

the price range over $40 must be explained by the lack of a homogeneous market. In spite of the aggregate oversupply of existing dwellings in the higher price classes, there were shortages in some places. Also there was the usual demand for custom-made dwellings to meet the requirements of particular families. There is always a market for some new houses regardless of the state of the secondhand market.

The 4.5 million additional households in 1940 were housed partly by this new construction, partly by absorption of the 1930 inventory of vacant dwellings and partly by the use of shacks and trailers, conversion of existing structures to house more than one family, and similar expedients.

The increase in the effective demand was all concentrated at the lower end of the scale. Since the demand for very cheap housing exceeded the supply, comparatively few dwellings were demolished. In other words, this shift in demand precluded the development of a large replacement market.

1945 AND FULL EMPLOYMENT

In analyzing the potential housing market which would exist with approximately full employment after the war, we have arbitrarily chosen the year 1945. It is near enough to be of immediate interest and to minimize possible errors in the estimates. At the same time it is far enough away so that we can hope the war will be over. The choice of another year would require some changes in the data but would not alter the fundamental conclusions.

By 1945 there will be about 31.5 million nonfarm households. This allows for the marked effect of high incomes on family formation. It may not make sufficient allowances for war marriages but the possible error in the calculation is not great.

Total nonfarm consumer increase is already 45 percent above April 1940. There is still some unemployment and the growth in both the size and productivity of the labor force will continue. Assuming full employment and the current 1942 price level, total income in 1945 could be about 60 percent above 1940. Most people do not expect that the 1942 price level will hold, but for the moment we can get a clearer picture of the outlook by making that assumption. Later we can modify our conclusions in the light of possible changes in the price level.

With a 60 percent increase in total income between 1940 and 1945 there may be a more than proportionate increase in both savings and taxes. We can assume that housing will maintain its usual proportion of all other expenditures. A 50 percent increase over 1940 would result in a total actual or imputed rent of about 15 billion dollars at 1942 prices in 1945.

More important than the increase in total housing expenditures is the rise in income per family and the consequent shift of effective demand to the higher price classes. The average rent which declined from $38 to $29 per month between 1930 and 1942 would rise to $40 in 1945. The shape of the curve for 1945 as shown in Chart 2 is derived partly from a study of the changes which occurred between 1930 and 1940 and partly from an analysis of those States which in 1930 and 1940 had family incomes above the average for the country as a whole.

The enormous market thus created can be measured by the areas between the two curves. The demand for nonfarm houses having a rental value of $30 or more would be 7 or 8 million dwelling units greater than in 1940. On the other hand, and in spite of the increase in the total number of families, the demand for dwellings with a rental of under $30 per month would be 3-4 million less than the number occupied in this price range in 1940.

The first effect of this demand would be to force a markup in the prices of existing structures. Even in a construction boom, the number of new dwellings built in a year is so small an addition to the total supply of houses that the market is determined largely by the demand relative to the existing supply. New construction could not possibly meet the demand fast enough to prevent people from bidding against each other for the older dwellings.

This reversal of the process which went on between 1930 and 1940 would be limited

somewhat by inertia. It takes time for people to adjust their scale of expenditures in line with increased income. Also, there is a tendency to stay in the same home, particularly if it is an owned home, just because of the problems and difficulties of moving.

MARKET FOR NEW CONSTRUCTION

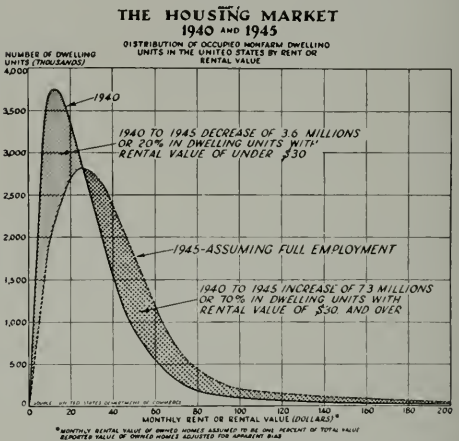
This marking-up of the prices of existing structures would not limit the market for new construction. Under the assumed conditions, new building could compete on a favorable basis for the greatly enlarged residential market.

In 1940, construction costs were on the whole adequately reflected in rental values where these exceeded $30 per month. This general statement did not hold true for all localities. Also it was less true in the $30 to $40 class and in the very high price brackets, although there was a substantial amount of new construction relative to the number of existing dwellings in all these categories.

If there was a competitive relationship between new construction and prices of existing structure with a rent or rental value over $30 per month in 1940, this condition would not be greatly changed under the assumed conditions in 1945. Construction costs are already about 15 percent above 1940 and this level is assumed in our projection of consumer income. The effect of this increase, however, would be partially offset by 5 years additional depreciation of existing structures. With any more than a slight mark-up over 1940 prices, these structures would be higher relative to new construction than they were in 1940.

The area between the two curves on Chart 2 indicates a potential effective demand for almost 8 million new dwellings costing $3,000 or more. This figure might be reduced somewhat where prices of existing structures could be marked-up and still compete with new construction, or where the market could be supplied through modernizing older dwellings. This is particularly true in the $3,000 to $5,000 price class. Also there are 2 or 3 million dwelling units being built between 1940 and 1945, most of them in this price class.

With these allowances the potential market with full employment in 1945 is 4-5 million dwellings most of them costing $5,000 or more. Deducting value of the site this is a total construction cost of over 30 billion dollars. This is far beyond the annual capacity of the construction industry. In the industry's biggest year it produced less than 1 million dwellings.



It would be ridiculous to estimate 4 times that volume for 1945. The resulting new construction would necessarily be spread over a period of years. Meantime, further increases in population would be adding to demand at the rate of perhaps half a million dwelling units per year.

INCREASED BUILDING COSTS AHEAD

The enormous size of this market calls for some qualifications of one of our earlier assumptions. In estimating consumer purchasing power in 1945 we assume that there will be no change in the current 1942 general price level. It is hardly likely that a boom of this magnitude could occur without a further increase in construction costs. This would affect our conclusions only to the extent that the rise in construction costs exceeded the rise in the general price level. Otherwise the net effect would be the same physical volume at a higher price. It will be up to the construction industry to see that the market is not stifled by rising costs.

There is another of our assumptions which needs to be qualified. We assume that people would continue to spend about the same pro-

portion of their budget for housing. This has been true in the past, subject only to the much higher rate of savings and taxes on higher incomes. It is likely to hold in the future. It is not, however, a fixed and immutable law. To some extent what people spend on housing will depend on what they can get for that expenditure. If the industry can produce a strikingly better house for the money, it is conceivable that the proportions of housing expenditures might be increased. There might be fewer shacks with high priced cars parked in the yard. If the industry cannot meet this challenge it is possible that the proportion of housing expenditures will be reduced and the balance spent for helicopters, television sets or whatever gadgets the post war world produces.

It is important in this connection to distinguish between the demand for housing and the demand for new construction. In the economist's language, the elasticity of the demand for housing is somewhat near unity. Nothing the industry can do will result in any more than a moderate increase in the proportions of housing expenditures to total income. The demand for new construction, on the other hand, is enormously elastic. We have already indicated how a 60 percent increase in income may result in an increase of about 60 percent in housing expenditures by nearer 2,000 percent in the demand for new construction. Similarly a cut in construction costs would have only a slight bearing on housing expenditures but would greatly increase the market for new dwellings.

The nature of this market is as interesting as its size. For ten years the industry has struggled to produce cheap housing. In 1940 the average Federal Housing Administration insured houses costing just over $5,000 including land and utilities. A large part of the construction in the last eighteen months has been under that figure. If our assumptions and calculations are correct, we can look forward to a market largely above $5,000 and with an average of over $8,000. This does not lessen the need to produce a better house at a lower cost or the possibility that by this means the market can be extended into the lower price brackets. It may, however, call for changes in other plans.

THE POTENTIAL REPLACEMENT MARKET

This shift in effective demand would have another important result. For reasons which we have partially indicated above we have never had a real replacement market for houses. Where dwellings have been torn down, this has been in large part because the site became more valuable for some other purpose. Rarely has a single family house been torn down and replaced by another single family house. This absence of a replacement market is illustrated by the relation of family formation to new construction over the last two decades.

With a net increase of 5.5 million nonfarm households from 1920 to 1930, there were about 7 million new dwelling units built, a million of which were added to the inventory of vacant dwellings. From 1930 to 1940 there was a net increase of 4.5 million nonfarm households but new construction was less than 3 million dwelling units. Since the demand was for very low price dwellings many of these families have had to be satisfied with light housekeeping units, sheds, shacks, trailers, tents, remodelled dwellings and other makeshift quarters. Others moved into houses which had been vacant in 1930, thereby reducing the inventory of unoccupied secondhand dwellings to more normal proportions.

We may now be looking forward to a replacement market which will be at least as important to the market created by the increase in the number of families. There were 3-4 million houses renting for less than $20 per month in 1940 for which there would be no market with full employment in 1945. That is, there would be no market if new dwellings could be built fast enough to satisfy the demand for better housing. This raises a whole series of questions.

How will these houses be removed from the market? Will we rebuild blighted areas with better housing or will we use these areas for parks, arterial highways, more accessible airports or other improvements? What is the most effective and most economical method

for hastening this rebuilding? Is it necessary for the Federal government to buy off all the vested interests or can a combination of local government and private enterprise do the job? If further decentralization is in order, with the new housing built out where there is more room for better living, how can fast, ample transportation facilities be provided? With population spread over a wider area, can the cost of utilities and government services be kept within reasonable limits? What happens to the local tax structure?

The whole problem of urban development is one to tax the best brains of industry and government. It is one that we cannot afford to ignore because of its enormous potentialities as a market for all sorts of construction.

This replacement market assumes no progress in the art of construction. Actually we know that war is a period of rapid change. It facilitates the development of new materials, new methods of construction, new mass production techniques, simplification, standardization, improved design. It helps to break down habits, customs and laws which have been barriers to the progress of the construction industry and to the efficient, effective, economical distribution of its product. If the industry can produce and market a good $2,500 house which is better than the secondhand dwellings now available at that price, if it can hasten the process of obsolescence of existing structures in the higher price brackets, then the replacement market can be greatly increased.

My whole analysis has admittedly been over-simplified. It ignores the dwellings which will be destroyed by fire, demolished to make way for other structures or abandoned in migration. It makes no allowance for a possible increase in the inventories of unoccupied dwellings valued at over $30 per month. It ignores the effect of a heterogeneous market which resulted in a substantial volume of construction between 1930 and 1940 when the same aggregative calculation would have indicated no demand at all. On the other hand it does not allow for the inertia which will delay the effect of higher income and it may not make sufficient allowance for higher taxes and savings. It assumes neither a further increase in construction costs nor the opposite possibility that the industry will produce a better house for less money.

4-5 million houses or 40 billion dollars are therefore only a general indication of the enormous market which would be created by full employment. However, the size and nature of that market seem sufficiently clear to have some bearing on our plans. It is large enough to assure at least a decade of capacity operations for the residential construction industry. It calls for a larger proportion of the better houses. It is built on replacement demand as well as population growth.

Local Housing Situation Becomes More Critical

THE housing situation in the East Bay Region is becoming more critical day by day. At this writing the incoming war worker faces a serious problem to find suitable housing for himself and family. The shifting of help in some of the plants is so rapid that it is almost unbelievable. Employees quit because they have no place to live, this in spite of the fact that California already has 20,000 new housing units occupied and 15,000 more under way.

Compulsory evacuation of non-war workers may offer the ultimate solution. Some think this will come before the first of the year by which time authorities look for an influx of 100,000 more people in the Oakland territory alone.

Statistics of housing authorities show that in the last two years 800,000 people have come into the State. Critical communities, like San Diego, which has doubled its population, and Vallejo, which has tripled, are facing a most serious situation.

Post war planning at this time has its obstacles. The future situation at the moment is completely unpredictable, a subject which will be discussed by experts in an early issue of Architect and Engineer.

FRED J. EARLY, GENERAL CONTRACTOR

STEEL FRAME AND JOIST SYSTEM USED IN CONSTRUCTION OF INDUSTRIAL PLANT

TYPICAL BUILDING OF INDUSTRIAL GROUP

PLANNING AND CONSTRUCTION FOR SPECIALIZED INDUSTRY

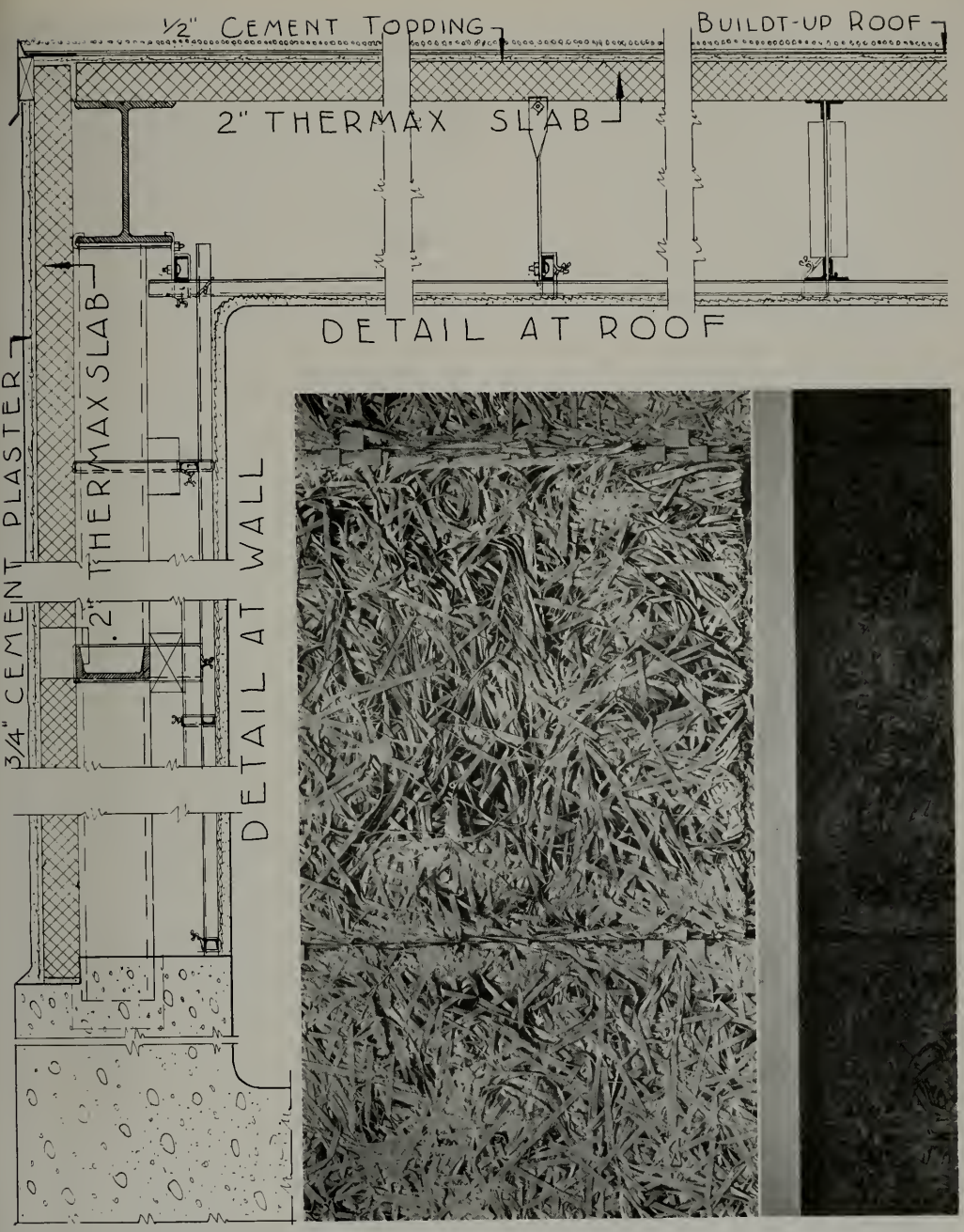
By ELDRIDGE T. SPENCER, Architect, A.I.A.

Early this year the Chemurgic Corporation of California was forced to build an additional plant to provide space for warehousing and manufacture of items connected with defense contracts. Due to the hazardous nature of the process of manufacture, the architect was directed to employ only materials which would be incombustible and which, in case of explosion, would not offer rigid resistance or shatter. Speed of construction was of course mandatory.

It was decided to use a welded steel frame covered with 2" slabs of thermax both on the walls and on the flat roof decks. This thermax was in turn finished with ¾" cement plaster and wire mesh on the walls and ½" cement topping and wire mesh on the roof. The roof was then finished with a standard built up roof. The interior was finished with metal lath and plaster, the plaster being painted and enameled to prevent the accumulation of dust. In certain warehouse buildings this interior finish was omitted, the thermax being exposed on the inside and treated with one coat of cement paint.

The program called for numerous separate buildings of various sizes laid out in a decentralized California type plan. The distance between buildings was determined either by the quantity of hazardous material they were to house or the degree of hazard of the manufacturing process. Concrete runways were provided to

ROOF CONSTRUCTION OF INDUSTRIAL PLANT, SHOWING STEEL, THERMAX, WIRE AND CEMENT TOPPING



DETAIL OF WALL AND ROOF CONSTRUCTION, INDUSTRIAL PLANT, WITH CLOSE-UP OF THERMAX WALL FINISHED WITH CEMENT PAINT

insure safe and efficient handling of materials by electric trucks. One story windowless buildings were used throughout. Either fluorescent or explosion proof lighting fixtures were installed to allow for twenty-four hour operation. The steel frames were grounded to serve as a protective grid for the dissipation of static charges, which, in this type of operation, cannot be allowed to accumulate. All electric panels were kept outside the buildings as a safety precaution.

This type of construction provides a pleasant and efficient working space since the thermax provides ample insulation for temperature control and the sound absorption characteristics of the material result in a low reverberation time and isolate the building from exterior noises.

It is interesting to note that this decentralized, windowless one story plant does not follow the dictates of eastern precedent which customarily houses all facilities possible under one roof. Of course our milder climate is the immediate explanation of this deviation. With the possibility of year around, out of door operation as a point of departure, several factors come into play which determine the final results.

From the point of view of safety engineering this decentralized plan is most desirable as it minimizes and localizes losses due to fire or explosion. Only a small amount of heat need be provided and that only at such points as required. B.T.U. can be economically distributed to such points in the form of electricity, gas or oil and a central heating and power plant is not necessary. The flat roofed low buildings keep the cubage at a minimum. The insulating quality of the thermax makes a uniform working temperature easy to maintain.

This approach to industrial design, by comparison, provides a higher degree of safety to personnel and property and is obtainable at a lower first cost. In reference to war conditions this type of planning and choice of material used has many advantages. When laid out informally as in the preliminary lay-out plan shown, the plant is well on its way toward final camouflage. The small isolated buildings offer a difficult target for aerial bombing. Duplication of facilities in separate buildings allows for flexibility in operation as well as making it almost impossible to put the plant out of operation by sabotage or aerial attack.

The principles of site planning outlined in Mr. Williamson's letter* illustrates the point and carries an important message to the American architect working on plants essential to the conduct of the War. By necessity for survival, the English have re-organized the same area. A well placed or lucky bomb hit cannot stop total production. By the adoption of their "Production Lattice" system discussed in Mr. Williamson's letter, output delays from bomb damage have been reduced as much as 50%, and even in the case of severe attacks one-half of the operating facilities have been saved.

In the face of severe criticism from production experts the plant on which this article is based has established the best record in comparison with other centralized plants producing the same item. The inefficiency of the de-centralization is largely overcome by flexibility in starting, stopping and the adjustment of the production program to the rotating labor shift system.

The lessons learned by bitter experience in England and China should be put into effect without delay to forestall disaster in the event our seaboard becomes a combat zone in fact. Industry will have to change its approach to site planning and, as a result, to operations, in order to survive years of modern warfare.

* ARCHITECT AND ENGINEER, June, 1942.

SCHEDULE OF ARCHITECTS' CHARGES APPROVED BY A.I.A.

(A statement of details of service to be rendered, and proper charges complying with good practice and custom)

1. The Architect's professional services consist of the necessary conferences, the preparation of preliminary studies, working drawings, specifications, large scale and full size detail drawings; the structural and mechanical design for the contract drawings and specifications; the drafting of forms of proposals; the taking of bids and the preparing of contracts; the checking of shop drawings; the inspection of models; the issuance of certificates of payment; the keeping of accounts; the general administration of the business and supervision of the work.

Proper charges for service are as follows:

(a) Structures requiring special and prolonged study in their design and detail; or where the production cost to the Architect is high in proportion to the project cost, such as monumental and residential work, decorative and cabinet work, landscape features and alterations and additions to existing buildings. On all such work a proper fee should be higher than the minimum fee named in paragraph (b);

(b) Structures of conventional character requiring usual skill and care which make up the common run of architectural practice. On such work a proper minimum commission for complete service, based on the total cost of the work, is six per cent (6%);

(c) For certain types of work essentially repetitive in character and of such magnitude as to warrant it, a different basis of charges than that stated above is proper, such basis to depend on the particular circumstances under which the work is conducted.

2. The Architect is entitled to compensation for articles purchased under his direction, even though not designed by him.

3. For special services, where the Architect is not otherwise retained, consultation fees for professional advice are to be charged in proportion to the importance of the question involved and services rendered.

4. The Architect, in addition to his fee, is entitled to reimbursement for costs of transportation and living incurred by him and his assistants while traveling in discharge of duties connected with the work, for the cost of telegrams and long distance telephone calls made in the interest of the Owner or to expedite the work, for the cost of blue printing in excess of the customary or reasonable amount, and for the costs to the Architect of the services of consultants where such services are required.

5. The rate of percentage arising from Article 1, i. e., the basic rate, applies when all of the work is let under one contract or the customary major contracts. Should the Owner determine to have other portions of the work executed under separate contracts, thereby increasing the Architect's burden of service, expense and responsibility, the Architect shall charge a rate in connection with such portions of the work greater than the basic rate.

6. If, after a definite scheme has been approved, the Owner makes a decision which, for its proper execution, involves extra services and expense for changes in or additions to the drawings, specifications or other documents; or if a contract be let by cost of labor and materials plus a percentage or fixed sum; or if the Architect be put to labor or expense by delays caused by the Owner or a contractor, or by the delinquency or insolvency of either, or as a result of damage by fire or other casualty, the Architect is to be equitably paid by the Owner for such extra service and expense.

7. Payments to the Architect on his fee are to be made as follows:

(Turn to Page 44)

TWO STREAMLINED TICKET OFFICES

By HARRY SANDERS, JR.

Two of California's most modern ticket sales offices are situated diagonally opposite each other at the corner of Sixth and Olive Streets in Los Angeles. Both offer new trends in decoration and design convenience, are worthwhile additions to the downtown shopping district of the Southern city.

First of the two offices to open for business was the Union Pacific Railroad's headquarters which were designed by Robert C. Williams, architect, of Chicago.

The spacious main lobby contains ample counter space for ticket salesmen, comfortable chairs in the reception area, an information desk and office space for a few travel agents. A special feature of the lobby is the department for "Women Travellers."

The central decorative feature of the room is a large map of the western portion of the United States on which are lighted—at intervals—the various routes of the Union Pacific. On either side of the map—adding a distinctly modern touch to the otherwise plain wall surfaces—are photo-murals showing action views of trains as well as scenic views throughout the West. Additional office space, telephones, baggage rooms and lounges are located on the mezzanine and second floors and in the basement.

The new ticket sales department of the

TICKET SALES OFFICE, UNION PACIFIC RAILROAD, LOS ANGELES
Photo mural shows action views of trains as well as scenic views along railroad's right-of-way

United Air Lines was designed by Zay Smith and represents an expenditure of $30,000. It is a remodelling job in the company's traditional red, white and blue color scheme.

The main lobby on the ground floor contains a reception area, facilities for handling baggage from the automobile entrance and ticket counters. Behind the counters are three curved murals executed by Artist Einar Peterson; the central piece consists of a large map of the United States showing the travel lanes of United's planes; the second mural depicts the scenic interests in the West, while the third presents the pictorial story of the East.

STREAMLINED INTERIOR, DOWNTOWN TICKET SALES OFFICE, UNION PACIFIC RAILROAD, LOS ANGELES

DOWNTOWN TICKET OFFICE, UNITED AIR LINES, LOS ANGELES

A remodeling project done in the company's traditional red, white and blue color scheme

SCHEDULE OF ARCHITECTS' CHARGES

(Continued from Page 41)

Upon completion of the preliminary studies, a sum equal to twenty per cent (20%) of the basic rate computed upon a reasonable estimated cost.

Upon completion of specifications and general working drawings (exclusive of details) a sum sufficient to increase payments on the fee to seventy-five per cent (75%) of the rate or rates of commission agreed upon, computed upon a reasonable cost estimated on such completed specifications and drawings, or if bids have been received, then computed upon the lowest bona fide bid or bids.

During the preparation of the preliminary studies and of the specifications and general working drawings, it is proper that payments on account be made at monthly or other intervals, in proportion to the progress of the Architect's service.

From time to time during the execution of the work and in proportion to the amount of service rendered by the Architect, payments are made until the aggregate of all payments made on account of the fee under this Article reaches a sum equal to the rate or rates of commission agreed upon and computed on the final cost of the work.

Payments to the Architect, other than those on his fee, fall due from time to time as such extra work is done or as costs are incurred.

No deduction is made from the Architect's fee on account of cost reduction due to the use of old materials, penalty, liquidated damages or other sums withheld from payments to contractors.

The words "the cost of the work" as used in Article 1 and 7 hereof, are ordinarily to be interpreted as meaning the total cost to the Owner for the execution of the work not including Architect's and Consultants' fees or the salary of the clerk-of-the-works.

8. Should the execution of any work designed or specified by the Architect or any part of such work be abandoned or suspended, the Architect is to be paid in accordance with or in proportion to the terms of Article 7 of this schedule for the service rendered, up to the time of such abandonment or suspension.

9. The Owner shall be required to furnish at his own expense for the information of the Architect a complete and accurate survey of the building site, giving the grades and lines of streets, pavements and adjoining properties; the rights, restrictions, easements, boundaries, and contours of the building site; full information as to sewer, water, gas and electrical services; test borings or pits and chemical, mechanical or other tests, when required.

10. The Architect endeavors to guard the Owner against defects and deficiencies in the work of contractors, but does not guarantee the performance of their contracts. The supervision of an Architect is such as he deems necessary to ascertain whether the work is being executed in conformity with his working drawings or specifications or directions, and is to be distinguished from the continuous personal superintendence to be obtained by the employment of a clerk-of-the-works.

When authorized by the Owner, a clerk-of-the-works, acceptable to both Owner and Architect, will be employed by the Architect at a salary satisfactory to the Owner and at the Owner's expense.

11. When requested to do so, the Architect will furnish preliminary estimates on the cost of the work, but he does not guarantee the accuracy of such estimates.

12. Drawings or specifications, as instruments of service, are the property of the Architect, whether the work for which they are made be executed or not.

Mass Production of Small Homes Creates New Era In Building

That the war has brushed aside obstacles and speeded the introduction of a new era for building—mass production of small homes, is the gist of an analysis of the building situation in the United States today, by Bror Dahlberg, President of the nationally known Celotex Corporation.

Describing the unprecedentedly rapid evolution of building methods as a result of war needs, Mr. Dahlberg said, "The armored columns and the bombers that made new rules of war have also made new rules for building. Speed has become imperative. War factories must be multiplied and scattered. Workers must be housed, and there is neither time nor material nor labor to be wasted.

"Defense worker housing is one of the three major war contributions which the industry is making. The others, of course, are the construction of war industry plants and the construction of cantonments, bases and other structures required for housing and servicing an armed force which may yet total 10 million men. These three major tasks will tax much of the industry's production capacity. Manufacturers making building materials essential to any one of these three activities will most probably continue to run at capacity for the duration of the war. Contractors and building tradesmen in defense housing 'critical' areas will also work at top speed. Beyond this, the building industry must inevitably feel the pinch of wartime restrictions. There will continue to be repair, remodeling and maintenance business essential to the health of the civilian population. And for these purposes there may continue to be available materials not required for more direct war purposes. But, it is war construction that will come the closest to replacing for both builders and manufacturers the volume of peace-time home building which will be non-existent until the war is ended.

"We are neck-deep in a struggle for survival. The happenings of the next few months are likely to erase from our minds all thoughts of what we shall be able to accomplish when peace comes again. For the present, and I fear for a long time to come, all of our time, our brain power and our energies must be devoted to fighting and the production of fighting materials.

"But there will come a day when we can begin to plan for our post-war world. My own firm conviction is that out of this war will come many good things.

"The terrific production capacity that will have been built up in the United States will be far greater than required to supply our pre-war wants in the pre-war way. That productive capacity will either be destroyed or turned to peace-time use.

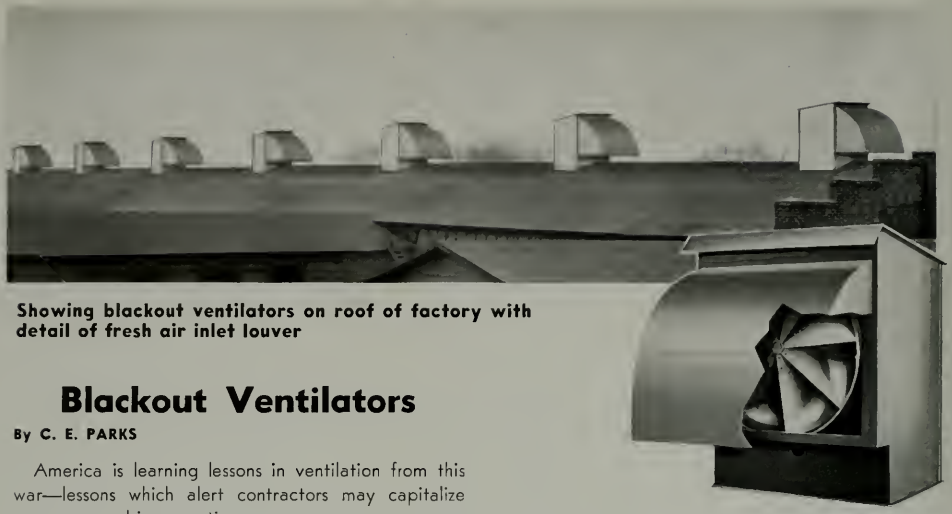
"If that capacity is destroyed and everybody settles back to the old pre-war methods and requirements, the result will be chaos. This no one will want, and the people generally will not permit. Having been convinced, as they will then be convinced, that everything for a better life can be produced and made available to all, the people, particularly the working class, will insist on having the advantages which that production can give them. This will include not only better automobiles, highways, air travel and everything else we see about us, but houses and living quarters as well.

"With the end of the war we will have again a redistribution of population requiring new cities, new towns, new living areas and new living quarters, as well as the reshuffling and reconstruction of living quarters in many of the old sections that may be continued. It is my belief that this will necessitate the building or rebuilding in the United States of 10 to 15 million family units of new or reconstructed houses, the cost of which will probably reach the enormous sum in dollars, of over 20 billions.

"Another post-war problem which America will have to face is first aid in the reconstruction of Europe and some of the other countries, particularly in the line of rebuilding the cities and living quarters for the people. This, I believe, will have to be, and will be, done in a large measure with building and other materials supplied from the United States, the volume of which will reach untold billions.

"I am going to dodge the answer to the question of where the money to do this will come from because that will be an absolutely secondary consideration. The production itself will supply the answer, because money is only representative of the fruits of labor and materials, and there will be plenty of labor and materials and the necessary production and transportation facilities required for proper distribution.

"To sum up—my considered opinion is that, at least so far as The Celotex Corporation is concerned, that Corporation will produce and have a market for all the building materials it can turn out on a seven-day, round-the-clock schedule during the war. And after the war, we will be called upon not only to continue that production but to increase many times our productive capacities."



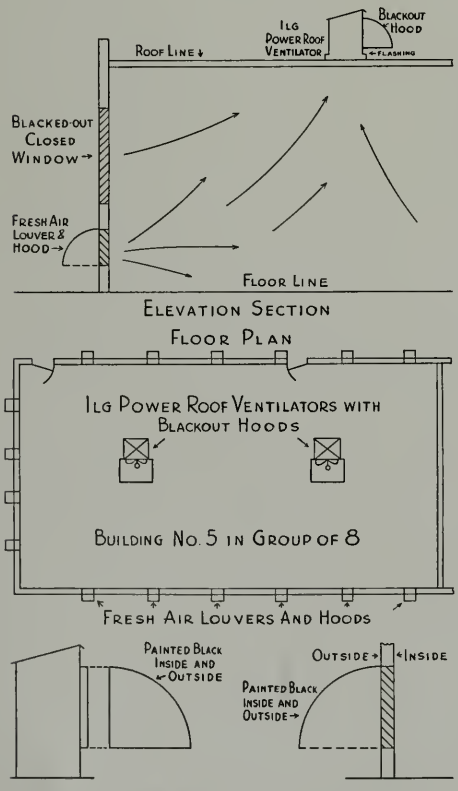
Showing blackout ventilators on roof of factory with detail of fresh air inlet louver

Blackout Ventilators

By C. E. PARKS

America is learning lessons in ventilation from this war—lessons which alert contractors may capitalize upon now and in peacetime.

As war work swings into high speed, offices and plants are subjected to excessive crowding. More people, more machines, more material are packed into limited floor space. In one office, designed to accomodate twenty-five desks conveniently, there may be as many as fifty desks sandwiched in. Tool rooms, machine shops, foundries, assembly lines are crowded with new workers, new machinery. Stockrooms and warehouses are bulging with supplies and finished parts.



Elevation section and floor plan of factory equipped with blackout ventilation

All of this "war-crowding" is leading to the need for better ventilation. When just a few people occupy a large area, the lack of completely adequate ventilation is not noticeable. When, however, the number of people in that given area is doubled, tripled, or quadrupled, inadequate ventilation immediately brings about a critical condition. Bad air, odors, excessive heat are depressingly apparent and result in fatigue of workers, an increase in scrapped products, a decrease in production levels.

Where inflammable materials are stored, crowding may bring about a concentration of fumes which presents the danger of explosion from a careless spark. And, where fumes, smoke, or steam are given off during the manufacturing process, increased activity may bring about a foggy condition that's a perfect setting for critical accidents. As every contractor knows, either of these dangerous conditions may be alleviated by rapid change of air—proper ventilation.

As in all problems concerning ventilation, there are many theories as to the correct method of ventilating a blacked-out building.

Perhaps the simplest type of blackout ventilation is the system illustrated here which was engineered for several Coast factories by the Ilg Electric Ventilating Co. While this system is simple to engineer and install, it has proved its effectiveness and economy under actual blackout conditions.

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ARCHITECTS' BULLETIN

Issued For

THE STATE ASSOCIATION OF CALIFORNIA ARCHITECTS

Northern Section

STATE ASSOCIATION MEMBER
OF THE
AMERICAN INSTITUTE OF ARCHITECTS

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NEW OFFICERS

Changes, due to war conditions, have been made in the Executive Board. President Wayne S. Hertzka has resigned to take an Army commission (see July Bulletin) and Vice-President Norman K. Blanchard has been elected president. Russell G. de Lappe becomes vice-president. J. Francis Ward is appointed to the Executive Board to succeed Clarence Mayhew, resigned. Vincent Raney and Malcolm Reynolds were appointed alternates on the Board for Harry M. Michelsen and Andrew T. Haas, respectively. Thus a quorum is assured for business at Board meetings.

Board Activities

Frederick H. Meyer was appointed delegate to the 1942 Convention, American Institute of Architects, to represent the Northern Section Association Membership in the Institute. The Board passed a resolution congratulating Governor Olson on the appointment of Richard J. Neutra as a member of the State Board of Architectural Examiners. (Query: What effect will this have upon applicants' rating in design?)

President Blanchard, at the request of the State Industrial Welfare Commission, appointed three architects to serve on a committee to recommend minimum wages for women office workers. Those appointed were George Simonds, Russell de Lappe and W. Clement Ambrose. (Query: Were these gentlemen chosen for their popularity with ladies, their research in social welfare, or as financial experts?)

The Master Plan

The Citizens' Master Plan Committee, under the chairmanship of Architect Gardner Dailey, is active in supporting the work of the San Francisco Planning Commission, with meetings, addresses and discussion before various civic organizations. In this connection it is interesting to note the page in "Time" for July 20, 1942, devoted to Eliel Saarinen as the greatest living authority on city planning. To quote a few salient passages:

"Nearly any competent city planner can lay out a perfectly planned city on paper. But how to reorganize gradually cities that already exist? Planner Saarinen calls his scheme 'organic decentralization.'

"Recognizing growth and change as permanent features of the modern metropolis, Planner Saarinen proposes to channel that growth as a gardener might gradually control the growth of a lusty plant. Instead of permitting the city's outward edges to encroach on and devour the countryside like the rim of a spreading fungus, he would have the city anticipate its own expansion by constructing well-organized satellite towns, into which the overflow of the central metropolis can be diverted in an orderly, practical and convenient manner.

"The eventual city plan, toward which all this reorganization would continuously move, Planner Saarinen would leave, not to matter-of-fact materialists, but to inspired architects who would be responsible for the city's cultural and spiritual life as well as its efficiency and prosperity. Saarinen believes,

against all mean-spirited defeatists, that a city should be a beautiful and inspiring work of art as well as an efficient machine. He regards most contemporary efforts at low-cost housing as human filing cabinets destined eventually to become the slums of the future.

"To Planner Saarinen the well-planned modern city must be conceived not only on maps, but in three dimensions as well, its towering masses, tree-lined boulevards, stretches of greenbelt, public squares and modest homes and shops all fitting neatly into place as parts of a beautiful and closely interwoven pattern. The future of architecture, he believes, will lie in the organization and integration of that pattern, in recapturing architecture's medieval role as the art of building cities rather than isolated buildings."

Architect-Engineer Service

The South Pacific Division, Army Engineer, has received instructions from Washington that hereafter on all construction jobs running over $1,000,000 an architect and engineer are to be employed. After they have completed the plans same are turned over to the Army who then awards the contract and supervises the construction.

Award of a contract to Reynolds, Brewton, Smith and Hill of Jacksonville, Florida, for Architectural-Engineering services, and award of a Negotiated Contract with the Simpson Construction Company of MacCleny, Florida, was announced in connection with the Air Force Training School at Boca Raton, Florida. Construction will be in excess of $3,000,000.

We have another case of the Cooke Construction Company of Detroit, which was awarded a Construction-Management service contract in excess of $3,000,000 while Robert and Company, Associates, of Atlanta, Georgia were awarded a contract for Architectural-Engineering-Management services in connection with a manufacturing plant in Georgia, to cost in excess of $3,000,000.

There appears to be more of this architectural-engineering service in effect in the east than so far in the west.

State Convention

"Win the War" will be the keynote of the 15th annual conclave of the State Association of California Architects at Del Monte, it was revealed by Chairman Vincent G. Raney.

Governor Olson will be asked to open the Convention to present the problems of the State in the all-out war effort. Architects are taking an increasingly important part in the national war effort. Among the important work upon which papers will be presented will be Housing, Plant Protection, Protective Concealment, Production Efficiency and Protection of Production facilities.

California's vital industries, representing fifty per cent of war production plants in aircraft and shipbuilding, are extremely vulnerable and plant protection is of great importance in order to maintain a constant flow of war material for our fighting forces.

If by proper camouflage the bombardier can be confused for from ten to fifteen seconds a plant can be kept in continuous production, and if by plant protection the destruction of valuable employees and machines can be confined to the minimum, the architect will have performed an invaluable service to his country. Architects have taken direct charge of work in camouflage and plant protection in cooperation with the Engineers Corps, U. S. Army.

Production could be materially increased by planned use of present plant facilities and architects are specifically trained for efficiency in planning for production. The use of these professional experts is increasing the output of our strategic materials in the plant and conserving of manpower by this saving of economic waste.

NEW BUILDING VOCABULARY

The war has given the building industry some odd names. Not many of us have an overly clear conception of the meaning of such titles as——

Warm-up Aprons
Traveling Shelter
Paint and Dope Building
Igloo
Holding and Reconsigning Building
Rescue Station
Dynamometer Building
Hutment
Parachute Drying Room
Theater of Operations Building
Stoppage and Jam Building
Blacksmith Shop (But not what it used to be—a place for shoeing horses).
Hard Standings

SOUTHERN CALIFORNIA CHAPTER ADDITIONS

The following have been elected to full Institute memberstip by Southern California Chapter, A.I.A.: Robert Field, Jr., Whitney Smith, Walter Reichardt, Eugene Montgomery Pierce and Lennart Palme, the latter transferred from Northern California Chapter.

Newly elected Associates of the Chapter are: James Zerbe and Amos Randall; new Junior Associates are: Hector Tate and William Cody, Jr.

The newly-elected received their certificates at the July meeting.

RICHMOND WAREHOUSE

Eldridge T. Spencer is completing plans for a one story reinforced concrete warehouse to be built at Richmond for the Chemurgic Corporation. Fred J. Early will have charge of the construction work.

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

Estimator's Guide

Giving Cost of Building Materials, Wage Scale, Etc.

Amounts given are figuring prices and are made up from average quotations furnished by material houses to San Francisco contractors. 3% Sales Tax on all materials but not labor.

All prices and wages quoted are for San Francisco and the Bay District. There may be slight fluctuation of prices in the interior and southern part of the state. Freight cartage, at least, must be added in figuring country work.

Bond—1½% amount of contract.
Government work ¾%.

Brickwork—

Common, $40 to $45 per 1000 laid, (according to class of work).
Face, $90 to $100 per 1000 laid, (according to class of work).
Brick Steps, using pressed brick, $1.00 lin. ft.
Brick Veneer on frame buildings, $1.00 sq. ft.
Common f.o.b. cars, $15.00 at yard. Cartage extra.
Face, f.o.b. cars, $40.00 to $60.00 per 1000, carload lots.

Building Paper—

1 ply per 1000 ft. roll	$3.50
2 ply per 1000 ft. roll	5.00
3 ply per 1000 ft. roll	6.25
Sisalkraft, 500 ft. roll	5.00
Sash cord com. No. 7	$1.20 per 100 ft.
Sash cord com. No. 8	1.50 per 100 ft.
Sash cord spot No. 7	1.90 per 100 ft.
Sash cord spot No. 8	2.25 per 100 ft.

Sash weights, cast iron, $50.00 ton.
Nails, $3.50 base.
Sash weights, $45.00 per ton.

Concrete Aggregates—

GRAVEL (all sizes) $1.45 per ton at bunker; delivered to any point in S. F. County $1.85.

	Bunker	Delivered
Top sand	$1.45	$1.85
Concrete mix	1.45	1.85
Crushed rock, ¼ to ¾	1.60	2.00
Crushed rock, ¾ to 1½	1.60	2.00
Roofing gravel	1.60	2.00
City gravel	1.45	1.85
River sand	1.50	1.90

Bank sand—$1.00 per cubic yard at bunker or delivered.

SAND—	Bunker	Delivered
River sand	$1.50	$1.85
Lapis (Nos. 2 & 4)	2.00	2.40
Olympia Nos. 1 & 2	1.80	2.20
Healdsburg plaster sand	$1.80	and $2.20
Del Monte white	50c	per sack

Common cement (all brands, paper sacks) carload lots $2.52 per bbl. f.o.b. car; delivered, $2.80; less than carloads delivered, 70c per sack.
Cash discount on carload lots, 10c a barrel, 10th Prox.; cash discount less than carload lots, 2%.

Atlas White, Calaveras White, Medusa White — 1 to 100 sacks, $2.00 sack, warehouse or delivery.

Forms, Labors average $40.00 per M.
Average cost of concrete in place, exclusive of forms, 35c per cu. ft.; with forms, 60c.
4-inch concrete basement floor ..... 12½c to 14c per sq. ft.
Rat-proofing 7½c
Concrete Steps ..... $1.25 per lin. ft.

Dampproofing and Waterproofing—

Two-coat work, 20c to 30c per yard.
Membrane waterproofing—4 layers of saturated felt, $4.50 per square.
Hot coating work, $2.00 per square.
Medusa Waterproofing, 15c per lb., San Francisco Warehouse.
Tricocel waterproofing.
(See representative.)

Electric Wiring—$12.00 to $15.00 per outlet for conduit work (including switches). Knob and tube average $3.00 per outlet.

Elevators—

Prices vary according to capacity, speed and type. Consult elevator companies. Average cost of installing an automatic elevator in four-story building, $2800; direct automatic, about $2700.

Excavation—

Sand, 60 cents; clay or shale $1 per yard.
Teams, $12.00 per day.
Trucks, $22 to $27.50 per day.
Above figures are an average without water. Steam shovel work in large quantities, less; hard material, such as rock, will run considerably more.

Fire Escapes—

Ten-foot galvanized iron balcony, with stairs, $150 installed on new buildings; $160 on old buildings.

Floors—

Composition Floors—22c to 40c per sq. ft.
In large quantities, 18c per sq. ft. laid.
Mosaic Floors—80c per sq. ft.
Duraflex Floor—23c to 30c sq. ft.
Rubber Tile—50c to 75c per sq. ft.
Terazzo Floors—45c to 60c per sq. ft.
Terazzo Steps—$1.60 lin. ft.

Hardwood Flooring (delivered to building)—

	13/16x2¼" T&G	⅜x2" T&G	⅜x2" Sq.Ed.
Clr. Otd. Oak	$144.00 M	$122.00 M	$141.00 M
Sel. Otd. Oak	118.00 M	101.00 M	114.00 M
Clr. Pla. Oak	120.00 M	102.00 M	115.00 M
Sel. Pla. Oak	113.00 M	92.00 M	107.00 M
Clr. Maple	125.00 M	113.00 M	

Wage—Floor layers, $12.00.
Note—Above quotations are all board measure except last column which is sq. ft.

Glass (consult with manufacturers)—
Double strength window glass, 20c per square foot.
Plate 80c per square foot (unglazed) in place, $1.00.
Art, $1.00 up per square foot.
Wire (for skylights), 40c per sq. foot.
Obscure glass, 30c to 50c square foot.
Glass bricks, $2.50 per sq. ft. in place.
Note—if not stipulated add extra for setting.

Heating—
Average, $1.90 per sq. ft. of radiation, according to conditions.
Warm air (gravity) average $48 per register.
Forced air, average $68 per register.

Iron — Cost of ornamental iron, cast iron, etc., depends on designs.

Lumber (prices delivered to bldg. site)—

No. 1 common	$43.00 per M
No. 2 common	41.00 per M
Select O. P. common	46.00 per M
2x4 No. 3 form lumber	32.00 per M
1x4 No. 2 flooring VG	90.00 per M
1x4 No. 3 flooring VG	85.00 per M
1x6 No. 2 flooring VG	96.00 per M
1¼x4 and 6, No. 2 flooring	95.00 per M

Slash grain—

1x4 No. 2 flooring	$65.00 per M
1x4 No. 3 flooring	62.00 per M
No. 1 common run T. & G.	48.00 per M
Lath	7.50 per M

Shingles (add cartage to price quoted)—

Redwood, No. 1	$1.20 per bdle.
Redwood, No. 2	1.00 per bdle.
Red Cedar	1.45 per bdle.

Plywood—Douglas Fir (add cartage)—

"Plyscord" sheathing (unsanded)	
⅜" 3-ply and 48"x96"	$39.75 per M
"Plywall" (wallboard grade)—	
¼" 3-ply 48"x96"	$43.70 per M
"Plyform" (concrete form grade)—	
⅝" 5-ply 48"x96"	$117.30 per M
Exterior Plywood Siding—	
¼" 5-ply Fir	$132.00 per M
Redwood (Rustic) 1"x8" clear heart	$ 95.00 per M

$5 less per M for A grade.

Millwork—Standard.
O. P. $100 per 1000. R. W. rustic $120.00 per 1000 (delivered).
Double hung box window frames, average with trim, $6.50 and up, each.
Complete door unit, $10.00.
Screen doors, $3.50 each.
Patent screen windows, 25c a sq. ft.
Cases for kitchen pantries seven ft. high, per lineal ft., $8.00 each.
Dining room cases, $8.00 per lineal foot. Rough and finish about 75c per sq. ft.
Labor—Rough carpentry, warehouse heavy framing (average), $17.50 per M.
For smaller work average, $35.00 to $45.00 per 1000.

Marble—(See Dealers)

Painting—

Two-coat work	per yard 50c
Three-coat work	per yard 70c
Cold water painting	per yard 10c
Whitewashing	per yard 4c

Turpentine, 65c per gal., in 5 gal. cans, and 55c per gal. in drums.
Raw Linseed Oil—95c gal. in light drums.
Boiled Linseed Oil—98c gal. in drums and $1.08 in 5 gal. cans.

White Lead in oil

	Per Lb.
1 ton lots, 100 lbs. net weight	11¾c
500 lbs. and less than 1 ton	12c
Less than 500 lb. lots	12½c

Red Lead and litharge

1 ton lots, 100 lbs. net weight	11¾c
500 lbs. and less than 1 ton	12c
Less than 500 lb. lots	12½c

Red Lead in oil

1 ton lots, 100 lbs. net weight	12¾c
500 lbs. and less than 1 ton	13c
Less than 500 lb. lots	13½c

Note—Accessibility and conditions cause some variance in costs.

Patent Chimneys—

6-inch	$1.25 lineal foot
8-inch	1.50 lineal foot
10-inch	2.25 lineal foot
12-inch	3.00 lineal foot

Plaster

Neat wall, per ton delivered in S. F. in paper bags, $17.60.

Plastering—Interior—

	Yard
1 coat, brown mortar only, wood lath	$0.50
2 coats, lime mortar hard finish, wood lath	.85
2 coats, hard wall plaster, wood lath	.72
3 coats, metal lath and plaster	1.25
Keene cement on metal lath	1.30
Ceilings with ¾ hot roll channels metal lath (lathed only)	.90
Ceilings with ¾ hot roll channels metal lath plastered	1.80
Single partition ¾ channel lath 1 side (lath only	.85
Single partition ¾ channel lath 2 inches thick plastered	$2.90
4-inch double partition ¾ channel lath 2 sides (lath only)	1.70
4-inch double partition ¾ channel lath 2 sides plastered	3.30
Thermax single partition; 1" channels; 2¼" overall partition width. Plastered both sides	2.50
Thermax double partition; 1" channels; 4¾" overall partition width. Plastered both sides	3.40
3 coats over 1" Thermax nailed to one side wood studs or joists	1.25
3 coats over 1" Thermax suspended to one side wood studs with spring sound isolation clip	1.45

Plastering—Exterior—

	Yard
2 coats cement finish, brick or concrete wall	$1.00
3 coats cement finish, No. 18 gauge wire mesh	1.75
Wood lath, $5.50 to $6.50 per 1000.	
2.5-lb. metal lath (dipped)	.19
2.5-lb. metal lath (galvanized)	.21
3.4-lb. metal lath (dipped)	.22
3.4-lb. metal lath (galvanized)	.24

¾-inch hot roll channels, $72 per ton.
Finish plaster, $18.90 ton; in paper sacks.
Dealer's commission, $1.00 off above quotations.
$13.85 (rebate 10c sack).
Lime, f.o.b. warehouse, $2.25 bbl.; cars, $2.15
Lime, bulk (ton 2000 lbs.), $16.00 ton.
Wall Board 5 ply, $50.00 per M.
Hydrate Lime, $19.50 ton.

Plasterers Wage Scale	$1.67 per hour
Lathers Wage Scale	1.60 per hour
Hod Carriers Wage Scale	1.40 per hour

Composition Stucco—$1.80 to $2.00 sq. yard (applied).

Plumbing—

From $100.00 per fixture up, according to grade, quantity and runs.

Roofing—

"Standard" tar and gravel, $7.00 per sq. for 30 sqs. or over.
Less than 30 sqs. $7.50 per sq.
Tile, $20.00 to $35.00 per square.
Redwood Shingles, $7.50 per square in place.
Copper, $16.50 to $18.00 per sq. in place.
5/2 #1-16" Cedar Shingles, 4½" Exposure ..... 8.00 Square
5/8 x 16" — #1 Cedar Shingles, 5" Exposure ..... 9.00 Square
4/2 #1-24" Royal Shingles, 7½" Exposure ..... 9.50 Square
Re-coat with Gravel, $3 per sq.
Asbestos Shingles, $15 to $25 per sq. laid.
Slate, from $25.00 per sq., according to color and thickness.
1/2 x 25" Resawn Cedar Shakes, 10" Exposure 10.50
3/4 x 25" Resawn Cedar Shakes, 10" Exposure 11.50
1 x 25" Resawn Cedar Shakes, 10" Exposure 12.50
Above prices are for shakes in place.

Sheet Metal—

Windows—Metal, $1.75 a sq. ft.
Fire doors (average), including hardware, $1.75 per sq. ft.

Skylights—(not glazed)

Copper, 90c sq. ft. (flat).
Galvanized iron, 40c sq. ft. (flat).
Vented hip skylights 60c sq. ft.

Steel—Structural (None available except for defense work)

$150 ton (erected), this quotation is an average for comparatively small quantities. Light truss work higher. Plain beams and column work in large quantities $140 per ton.

Steel Reinforcing (None available except for defense work).

$150 to $200 per ton, set.

Stone—

Granite, average, $6.50 cu. foot in place.
Sandstone, average Blue, $4.00. Boise, $3.00 sq. ft. in place.
Indiana Limestone, $2.80 per sq. ft. in place.

Store Fronts—

Copper sash bars for store fronts, corner, center and around sides, will average $1.00 per lineal foot.
Note—Consult with agents.

Tile—Floor, Wainscot, etc. — (See Dealers)

Asphalt Tile—18c to 28c per sq. ft. installed.

Wall Tile—

Glazed Terra Cotta Wall Units (single faced) laid in place—approximate prices:

2 x 6 x 12	$1.00 sq. ft.
4 x 6 x 12	1.15 sq. ft.
2 x 8 x 16	1.10 sq. ft.
4 x 8 x 16	1.30 sq. ft.

Venetian Blinds—

40c per square foot and up. Installation extra.

Windows—Steel

Factory type sash 30c ft.
Ventilators for steel sash $5.00 each.

1942 BUILDING TRADES WAGE SCALES FOR NORTHERN CALIFORNIA

*6-hour day **7-hour day

CRAFT	San Francisco	Alameda	Fresno	Marin	Sacramento	San Jose	San Mateo	Vallejo	Stockton
ASBESTOS WORKERS	$1.50	$1.25	$1.25	$1.37½	$1.12½	$1.25	$1.25	$1.25	$1.25
BRICKLAYERS	* 1.75	* 1.75	* 1.50	* 1.75	* 1.75	* 2.00	* 1.79-1/6	* 1.75	* 1.75
BRICKLAYERS' HODCARRIERS	* 1.35	* 1.25	* 1.05	* 1.25	* 1.05	* 1.35	* 1.35	* 1.40	* 1.14
CARPENTERS	1.37½	1.37½	1.25	1.37½	1.25	1.25	1.37½	1.25	1.25
CEMENT FINISHERS	1.37½	1.37½	1.25	1.25	1.25	1.50	.....	1.25	1.25
ELECTRICIANS	1.50	1.50	1.50	1.37½	1.50	1.50	1.50	1.50	1.37¼
ELEVATOR CONSTRUCTORS	1.61	1.56	1.50	1.61	1.61	1.50	1.50	1.56	.....
ENGINEERS: Material Hoist	1.50	1.37½	1.25	1.50	1.37½	1.62½	1.37½	1.37½	1.25
Piledriver	1.75	1.60	1.60	1.75	1.75	1.75	1.62½	1.75	.....
Structural Steel	1.75	1.60	1.60	1.75	1.75	1.75	.....	1.60	1.60
GLASS WORKERS	1.25	1.25	1.12½	1.25	1.12½	1.21	1.25	1.25	.....
IRONWORKERS: Ornamental	1.50	1.31¼	1.37½	1.31¼	1.37½	1.31¼	1.25	1.31¼	.....
Reinf. Rodmen	1.50	1.31¼	1.31¼	1.31¼	1.31¼	1.60	1.31¼	1.31¼	1.25
Structural	1.75	1.60	1.60	1.60	1.60	1.75	1.50	1.60	1.37½
LABORERS: Building	.85	.87½	.82½	.81¼	.85	.81¼	81¼	81¼	.80
Concrete	.87½	.93¾	.90	.81¼	.92½	.....	.85	.90	.90
LATHERS	* 1.75	* 1.75	* 1.50	* 1.75	* 1.60	* 1.75	* 1.75	* 1.50	* 1.50
MARBLE SETTERS	1.43¾	1.25	1.25	1.31¼	1.37½	1.25	1.31¼	.....	.....
MOSAIC & TERRAZZO	1.00	1.25	1.12½	1.12½	1.15-5/8	1.12½	.....	.....	.....
PAINTERS	** 1.37½	** 1.50	** 1.28-4/7	** 1.37½	1.25	** 1.35-5/7	** 1.42-6/7	** 1.50	1.25
PILEDRIVERS	1.47	1.40	1.40	1.50	1.40	1.47	1.40	1.40	.....
PLASTERERS	* 1.66-2/3	* 1.66-2/3	* 1.75	* 1.66-2/3	1.75	* 2.00	* 2.00	* 1.75	* 1.83-1/3
PLASTERERS' HODCARRIERS	* 1.50	* 1.45	* 1.40	* 1.40	* 1.18¾	* 1.35	* 1.75	* 1.40	* 1.50
PLUMBERS	1.52½	1.50	1.53-1/8	1.50	1.56¼	1.62½	1.50	1.50	1.37½
ROOFERS	1.37½	1.37½	1.12½	1.25	1.25	1.37½	1.25	1.25	1.25
SHEET METAL WORKERS	1.37½	1.37½	1.43¾	1.37½	1.50	1.50	1.37½	1.25	1.37½
SPRINKLER FITTERS	1.50	1.37½	..	1.25	..	1.62½	.....	1.50	.....
STEAMFITTERS	1.50	1.50	1.53-1/8	1.50	1.56¼	1.62½	1.50	1.50	.....
STONESETTERS (Masons)	* 1.50	* 1.75	1.50	* 1.75	* 1.75	* 1.50	1.75	* 1.75	* 1.50
TILESETTERS	1.50	1.37½	1.37½	1.37½	1.37½	1.50	1.50	1.37½	.. ..

Prepared and compiled by
CENTRAL CALIFORNIA CHAPTER, ASSOCIATED GENERAL CONTRACTORS OF AMERICA
with the assistance and cooperation of secretaries of General Contractors Associations and Builders Exchanges of Northern California.

ADVANCED TO FELLOWSHIP

Following are short biographies of Pacific Coast architects who have recently been advanced to Fellowship in the American Institute of Architects:

Ralph Carlin Flewelling, Southern California Chapter—

Admitted to the Institute in 1927. Has been advanced to Fellowship in The American Institute of Architects for his long record of architectural practice, distinguished for excellence of design, individual and pleasing character of his executed work and for his unselfish contribution of time and effort in the interest of the profession, and constructive activity in public affairs related to architectural design.

Robert Hall Orr, Southern California Chapter—

Admitted to The Institute in 1912. For his long record of service to the profession, his contribution of time and effort to the organization of the State Association of California Architects, his service to The Institute in initiating and organizing the first pre-convention meeting of state societies at San Antonio, Texas; and for his counsel and guidance in directing the development of an acceptable program for the unification of the entire architectural profession.

Louis J. Gill, San Diego Chapter—

Admitted to The Institute in 1929. A charter member of the San Diego Chapter, serving as its president and secretary. Held in affection and esteem by his colleagues. Has been advanced to Fellowship in The American Institute of Architects in recognition of the high quality of his architectural work, for his unselfish service in the interests of the San Diego Chapter, his constructive activity in civic affairs and for his loyalty to The Institute and rigid adherence to the high standards for which it stands.

William Hamblin Crowell, Oregon Chapter—

Admitted to The Institute in 1928. A leader in public affairs in the community in which he lives; held in high esteem by his fellow architects for his professional integrity. Has been advanced to Fellowship in The American Institute of Architects for his constructive and unusual service to his Chapter, sincere devotion to the high ideals of The Institute, for continued high standard of his architectural practice and excellence of executed work.

PROMOTED

Charles Fry, formerly practicing architecture in San Francisco, more recently a resident of Los Angeles, has been promoted from First Lieutenant to the rank of Captain.

Henry Carlton Newton of Los Angeles, whose ecclesiastical work is familiar to Architect and Engineer readers, is now a full Colonel, having been promoted from Lieutenant-Colonel.

S. F. ARCHITECTURAL FIRM BUSY

Edward J. Maher, architect of San Francisco, will supervise construction of the new Naval Supply Depot at Clearfield, Utah.

Blanchard & Maher, Clyde C. Kennedy, San Francisco, and Ashton, Evans & Hodgson, Salt Lake City, have joined to form the architect-engineer contractor for this $30,000,000 project, which will be one of the principal supply depots in the United States. The group has elected Maher to act as manager for the architect-engineer services of the project, which will include storehouses, trackage, utilities, an administrative center and living accommodations for personnel.

Norman K. Blanchard will continue in charge of the San Francisco office, supervising several other war construction projects in California and Nevada. These include provision of 1200 dwelling units for workers at W. A. Bechtel Company's shipyards in Sausalito, California, which the firm is designing in collaboration with J. Francis Ward, San Francisco architect.

CHENEY AN AIR FORCE MAJOR

Howard L. Cheney, formerly Consulting Architect in the Office of the Supervising Architect, Public Buildings Administration, has been commissioned a Major in the U. S. Army Air Forces, his duties to be concerned "with the design and construction and inspection of airports and air bases." Mr. Cheney was architect for the Washington Airport, delayed pictures of which will soon be published in this magazine.

WORKING FOR UNCLE SAM

Gifford E. Sobey, architect of San Jose, has recently received an appointment as Project Planner for the Federal Public Housing Authority. At the moment Mr. Sobey is supervising the construction of 2,000 war apartments in Portland, Oregon. Mr. Sobey is one of the many subscribers of Architect and Engineer making good with Uncle Sam.

WILLIAM H. AUSTIN, ARCHITECT

William Horace Austin, 61, architect, passed away after a few days' illness at Seaside Hospital, Long Beach. Mr. Austin, in partnership with Harold Wildman, designed many civic and school buildings in Southern California.

BLANCHARD SUCCEEDS HERTZKA

Norman K. Blanchard, San Francisco, will serve as president of the State Association of California Architects for the remainder of the year, succeeding Wayne S. Hertzka, who was recently commissioned a Captain in the U. S. Engineer Corps.

The Month's Digest of New Building Literature

All of the literature described here is available to architects, engineers, contractors, draftsmen and specification writers upon request direct to the manufacturers.

HOME DECORATION—Here is a new book on home decoration, called "Color for America," that gives the architect hundreds of good ideas on color planning and interior decorating. Practically all types of houses familiar to the United States are shown, including typical Californian, and for each there is a range of both exterior and interior treatment. Write The Glidden Company, 11001 Madison Ave., Cleveland, Ohio.

MEASURING INSTRUMENTS—A condensed listing of control and measuring instruments. Two pages are devoted to the "Flame-otrol," a combustion safeguard device for furnaces, boilers and commercial and industrial ovens. Contains 16 pages; gives prices. Wheelco Instrument Co., Harrison & Peoria Streets, Chicago. Ask for Bulletin Z6000.

FARM BUILDING PLANS—For 75 years the company issuing this catalog, "Louden Farm Building Plans and Equipment Catalog 75," has specialized in the manufacture of equipment for farm buildings. Everything possible going into the construction of farm buildings is illustrated. Write to the Louden Machinery Company, Fairfield, Iowa.

GLUED PREFABRICATED HOUSES—This is a six-page folder for A.I.A., File No. 19-M, describing the construction of glued structures. Glue can be used, says the folder, to: Fasten plywood or composition board sheathing or exterior panels to framing; fasten ceiling panels to ribs or framing; join wall sections during erection; assemble built-in furniture, etc., etc. Write to Casein Company of America, 350 Madison Ave., New York City.

STEEL FLOORING—An informative folder on Open Steel Flooring and Steps describes the principal patterns of gratings and their applications and gives a tabulation of safe loads for various sizes, weights, etc. Copies can be obtained from Kerlow Steel Flooring Co., 21 Mallory Ave., Jersey City, N. J.

OIL BURNING MANUAL—This is a treatise on natural draft oil-burning. Subjects covered are air flow, furnace volume, available draft, breeching requirements, evaporation of oil, etc. Address your request to Combustion Equipment Division, The Hotstream Heater Co., 8007 Grand Ave., Cleveland, Ohio.

GLASS BLOCKS — The Insulux Products Division of Owens-Illinois Glass Company has prepared three leaflets discussing the application of glass blocks to light, maintenance and heating. Address Owens - Illinois Glass Company, Advertising Division, Toledo, Ohio.

ELECTRIC OPERATORS—A leaflet issued by a company long identified with the manufacture of sliding overhead type automatic doors, gives complete information on types of operators available, motor size, pull, etc. Barber-Coleman Company, Rockford, Ill.

GAS AND OIL BURNERS—In this pamphlet is illustrated a combined gas and oil burner, which includes a gas burner ring and an oil atomizer, each delivering its respective fuel in a finely divided and uniformly dispersed screen across the burner throat. Write to Peabody Engineering Corp., 580 Fifth Ave., New York City.

STEEL INSULATION—Steel sheets for insulation were first presented to the American Society of Refrigerating Engineers in 1934. Use of a protective coating is necessary to control rust and corrosion. A recent leaflet describes the advantages of this type of insulation. Refer to Ferro-Therm Steel Insulation and write to American Flange & Manufacturing Co., Inc., 30 Rockefeller Plaza, New York City.

OPENING AND CLOSING SASH—Screw thread sash operators for opening and closing sash in offices, hospitals, power stations, stores, churches, banks, etc. This catalog illustrates and describes methods for operating inaccessible sash, transom sash, etc. Ask for Sash Operating Catalog and write to Lord & Burnham, Irvington-on-Hudson, N. Y.

CAPILARY AIR CONDITIONERS—A new bulletin G-2 has been issued by the Air and Refrigeration Corporation, describing the capillary cell and its application in air conditioning equipment as a direct heat transfer surface between water and air. The bulletin outlines the functions of the cells for cooling and dehumidifying, humidifying, air cleaning, evaporative cooling, absorption, etc. Write to Air and Refrigeration Corporation, 475 Fifth Avenue, New York, N. Y.

STRUCTURAL ENGINEERS AND CURRENT PRACTICES

"Current Structural Engineering Practices," was the topic discussed in open forum by the S. F. Structural Engineers Association at their August meeting at the El Jardin restaurant at 22 California Street. Most members of the profession have found it necessary to modify established structural engineering practices in recent months to meet war conditions. Investigation, design and construction practices are today dictated by available time and materials.

War construction work may be said to have reached its peak and engineers now busily engaged are somewhat dubious about the future.

William D. Lotz is now a Lt. Commander in the Navy and is with the Bureau of Yards and Docks, Washington, D. C. His address is Officers Club of Washington, 1400 New Hampshire Avenue, Washington, D. C.

The Advisory Committee met on July 17th and the following policies were adopted: The Annual Convention for 1942 will be dropped. A suggestion was made that all meetings be cancelled during the war. This was not approved, as it was felt that the Association would disintegrate, making it almost impossible to reorganize the Association after the war.

Will G. Corlett is busy working on Government Defense. Corlett's son, Bill, is still in Honolulu. He is Assistant Architect with the United States Engineers.

Milo S. Farwell will address the weekly luncheon meeting of the Sacramento Section, American Society of Civil Engineers, Tuesday, September 8th. The subject will be "Preservation of Metal Structures in Contact with Ground and Water." He will explain the problems of corrosion, mitigation or protection. The talk will be illustrated with lantern slides.

The annual convention of the Pacific Coast Building Officials Conference will be held in Reno, Nevada, October 6, 7 and 8.

Franklin P. Ulrich was guest speaker before the weekly meeting of the Sacramento Section, A.S.C.E., on July 21. Subject: "Earthquake Distribution and Frequency."

Frederic F. Hall is now Chief of Protective Construction, Division of Property Protection, United States Office of Civilian Defense, located on the 8th floor of the Whitcomb Hotel, San Francisco.

William H. Ellison and Stanley King have formed a temporary engineering association to handle the design of 26 concrete hulls for the United States Maritime Commission with headquarters in Room 616 at No. 149 New Montgomery Street. They are also busy on the design of a conveyor structure, crusher houser, etc., for the Fontana plant of the Henry J. Kaiser Company.

ARCHITECTS MIGRATE

C. A. Caulkins has moved from the Rosenberg Building, Santa Rosa, to his home, 1107 St. Helena Ave., in the same city.

Arnold S. Constable has closed his San Francisco office at 580 Market Street and moved to 95 Spencer Ave., Sausalito.

Edmund P. DeMartini has moved from 948 Broadway, San Francisco, to 421 Fourteenth Ave., same city.

W. Herbert has closed his office in the Rosenberg Building, Santa Rosa, and is registered at Hotel Grand, Medford, Oregon.

Paul W. Jones has moved from 1628 Ninth Street, South, Fargo, North Dakota, to 718 Colorado Ave., La Junta, Colorado.

Alfred W. Johnson has moved from 927 Grove Street, San Francisco, to 761 Farringdon Lane, San Francisco.

Eric Johnson, 931 North El Dorado Street, Stockton, is now at 844 North Sutter Street, same city.

Guy O. Koepp has moved from Carmel to 1401 North Curson Street, Hollywood.

Raphael Lake's new address in Fresno is Route 3, Box 531.

Charles F. Maury has moved from 9 Geary Street, San Francisco, to 1617 Lyon Street, same city.

Earl J. Osborne from 251 Kearny Street, San Francisco, to 1910 California Street, same city.

William Henry Rowe, 127 Montgomery Street, San Francisco, to 1035 Lancaster Road, Hillsborough.

Theodore G. Ruegg has moved from 251 Kearny Street, San Francisco, to 4018 22nd St., same city.

Wilton Smith from 31 Pacific Ave., Santa Cruz, to 3589 Clay Street, San Francisco.

Alfred C. Williams from 666 Caldwell Road, Oakland, to 5966 Linn Drive, same city.

Myron Hunt & H. C. Chambers, 408 South Spring Street, Los Angeles, have established temporary offices at Camp Joseph H. Pendleton, P. O. Box 270, Oceanside, California.

Ismon Callcutt has moved from Burlington, North Carolina, to 2014 Oakland Ave., Middle River, Maryland.

ANENT POST-WAR PLANNING

(Grafton Sanderson in S. F. Chronicle)

Post-war planners in Washington are so wrapped up in the national pastime they are very apt to overlook the immediate problem of winning the war. They seem to take it for granted the Allies are going to win. What their optimism is based on God only knows. So far the Axis has had all the best of it.

Right now the people are interested in a plan that will defeat the enemy. It's time the Allies were carrying the ball. You can't score by remaining on the defensive. If we don't start to roll pretty soon all the post-war planning will be done by the Axis in their own quaint way.

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BLACKOUT VENTILATORS

(Continued from Page 46)

Air inlets, equipped with sheet steel blackout hoods, are provided on all outside walls, properly positioned to avoid short-circuiting of air currents.

Located on the roof are IIg power roof ventilators, a standard product, consisting of a propeller fan in a weatherproof penthouse. The size and number of power roof ventilators are determined by the size of the building to be ventilated as well as by the rate of air change desired. Each ventilator is provided with a blackout hood to prevent light transmission.

One important feature of the IIg Blackout Ventilation System is that it is not wholly an "emergency" purchase. After the war is over, owners of power roof ventilators may replace the blackout hoods with standard IIg shutters and have a power ventilation system which will function just as long and as efficiently as a similar system ordered for normal ventilating purposes.

It is interesting to note, too, that in the buildings where this "emergency" blackout ventilation equipment is installed, management has been agreeably surprised at the results. Even under war-crowded conditions, the rapid change of air has produced more effective ventilation than was possible in the same building under normal conditions with antiquated air moving equipment.

TENITE STRIPS FOR BLACKOUT SHADES

Tenite strips offer a solution to the problem of how to avoid cracks of light showing around the edges of blackout shades. These strips act as tracks, permitting easy raising and lowering of the shades and, at the same time, preventing any light from escaping.

The plastic Tenite forms an attractive edging around the window frame and does not in any way mar the decorative effect of the room. It retains its natural high luster without the aid of polishing agents.

The strips are available in both black and white Tenite, and are designed for use in industrial plants as well as private homes. They may be purchased at retail outlets where window shades are sold.

These Tenite strips are extruded by Extruded Plastics, Inc., Norwalk, Conn. They are distributed by Plastic Products Engineering Co., 500 Fifth Ave., New York, N. Y. Tenite is a product of Tennessee Eastman Corp., Kingsport, Tenn.

THREE WESTERNERS NAMED

Three prominent Westerners have been named to the committee of eighteen executives appointed to an industry advisory committee for Portland cement by Price Administrator Henderson. They are Garner A. Beckett, president, Riverside Cement Co., Los Angeles; Henry J. Kaiser, president, Permanente Corp., Oakland, and E. P. Lucas, president, Superior Portland Cement Co., Seattle.

INDUSTRIAL WOOD FENCE

The Rock Island Sash & Door Works are manufacturing a new industrial wooden fence as a substitute for steel fencing which has been restricted by

the WPB. The fencing, which is of sturdy construction, weighs 20.4 pounds per lineal foot, 2,000 lineal feet or 44,000 pounds to a car. This innovation in plant protection has been approved by the Chief Engineers and the Provost Marshal of the Army Engineering Corps.

EAST BAY LUMBER

Breaking of the lumber bottleneck which hindered privately financed East Bay defense housing, is announced by War Production Board officials.

Under limitation order 121, which was effective May 18, no lumber would be allowed for privately financed family and multiple family dwellings in the War Housing Priority Area of Alameda, Oakland, Berkeley and Richmond, if the construction were started after May 13 or the housing were intended for other than in-migrant workers.

An amendment to this limitation order removes the restriction on the date of building construction and permits the use of lumber on defense housing construction and also removes the limitation on rental of housing to only in-migrant workers who have resided here for four months and permits the sale of defense housing which previously had been prohibited.

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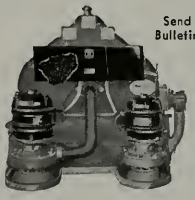

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WOOD-GLUE RELEASE STEEL FOR WAR

The present emergency, which places priorities on many former "necessities," is producing a crop of "war babies" in the industrial field, some of which have been found to have merits excelling the original product. Such is the case of wood, which, with glue, emerges as a heavy construction material replacing steel, a vital necessity in defense work.

The easy availability of wood, plus its superior strength when combined with construction glues, and its adaptability for construction work, make it a natural alternate for steel, which is being diverted into the production of arms, tanks and other war materials.

For instance, if glue were used instead of the conventional type of building materials in all of the 48,000 FWA homes now being built under contract, a conservative estimate shows that a saving of 100 pounds of nails in each—or a total of 2400 tons of metal—would be affected for war supplies. As a matter of fact, a very large number of these homes will be glue-constructed.

It is interesting to note that the government itself is one of the first agencies to put into practice the slogan "Wood and Glue Release Steel for War." Government construction projects are using laminated arches for construction of airplane hangars, armories, ship-building sheds and factories. In addition, thousands of government workers, as well as service men, are now being housed in dwellings of glued construction. For example, in California alone there are a half-dozen large defense housing projects totaling nearly 5,000 living units which are of glue construction.

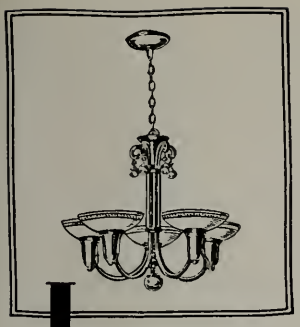
NEW BOOK ON WOOD TECHNOLOGY

All of the significant features of wood—the phases, processes and many uses of this essential material—are effectively treated by a nationally known authority, Harry D. Tiemann of the U. S. Forest Products Laboratory and the University of Wisconsin, in "Wood Technology," just published by the Pitman Publishing Corporation, New York. This is the first comprehensive book on the subject written in the English language.

Abundant original material includes an indispensable identification key. Authoritatively, yet simply, the author discusses the mechanical, physical and chemical properties and structure of wood. Excellently written and conveniently organized, this book is profusely illustrated with photographs and photomicrographs.

THOMAS J. HATELY DIES SUDDENLY

Stricken while enjoying a game of golf, Thomas J. Hately, senior member of Hately and Hately, plumbing contractors of Sacramento, died recently, aged 55. Mr. Hately's firm has been a prominent bidder on plumbing work in Northern California public buildings for many years. He was president of the Del Paso Country Club of Sacramento.



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STUDENT TRAINING

The loan fund of $5,000,000 voted by Congress to help college students speed up their training for technical and professional jobs will be available soon. Paul V. McNutt, War Manpower Commission Chairman, announced recently.

Monthly loans totalling not more than $500 a year, at 2½ per cent interest annually and cancelled if the student is drafted during training, will be made directly to students by colleges or universities, and by public or college-connected agencies. Federal funds will be allocated to the loaning institutions by the U. S. Office of Education on the submission of estimates of the amount of money for such loans.

Bulletins announcing the program have been sent to all colleges and universities in the United States by the Office of Education.

This financial assistance will permit students to pursue intensive programs of study which will prepare them as soon as possible to meet growing need for technicians. Loans will be made to students in engineering, physics, chemistry, medicine, dentistry, pharmacy and veterinary who are within two years of completing their work.

Plans for administration of the student loan fund are being developed by Dr. Fred J. Kelly, Chief, Division of Higher Education, Office of Education. They will be submitted by John W. Studebaker, U. S. Commissioner of Education, to Mr. McNutt, for approval.

Essential points of the student war loan program as developed by Commissioner Studebaker are:

Where to apply. Loans are made to students directly by colleges or universities or public or college-connected agencies. Federal funds are paid the colleges upon estimates submitted as to the amounts necessary for loans.

Special conditions. Loans are available only to students who are registered in accelerated programs in degree-granting colleges and universities and whose technical or professional education can be completed

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within two years, in one of the following fields:

Fields of work. Engineering, Physics, Chemistry, Medicine (including veterinary), Dentistry, and Pharmacy.

Written agreement. The student agrees in writing, (1) to participate, until otherwise directed by the Chairman of the War Manpower Commission, in accelerated programs of study in any of the authorized fields; and (2) to engage for the duration of the wars in which the United States is now engaged, in such employment or service as may be assigned by officers or agencies designated by the Chairman of the War Manpower Commission.

Scholarship. Students must attain and continue to maintain satisfactory standards of scholarship.

Need. Students must be in need of assistance.

Maximum loan. Loans shall be made in amounts not exceeding tuition and fees plus $25 per month, and not exceeding a total of $500 to any one student during any 12-month period.

Security. Loans are to be evidenced by notes executed by student borrowers payable to the Treasurer of the United States.

Interest rate. The rate of interest is 2½ per centum per annum.

Repayments. Repayments of loans are to be made through the colleges, universities, or other agencies negotiating the loans, to be covered into the Treasury as miscellaneous receipts.

Cancellation. The indebtedness of a student shall be cancelled: (1) If before completing his course he is ordered into military service during the present wars under the Selective Training and Service Act of 1940, as amended; or (2) if he suffers total and permanent disability; or (3) in case of death.

DEFENSE HOUSING

The War Production Board has added seven new areas to the Defense Housing Critical Area List. They are: Alliance, Ohio; Sterlington, Louisiana; Decatur, Alabama; Bishop and Dos Palos, California; Bay City-Midland, Michigan; Miami. Oklahoma.

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U. S. OK'S REPAIR WORK

Essential repairs and maintenance are vital to the preservation of American home properties in sound, livable condition during wartime, according to Federal Housing Commissioner Abner H. Ferguson.

Because of the urgent need for conserving critical war material, new home construction has been sharply curtailed and the war housing projects now being built are of necessity reserved to meet the needs of the most essential war industry workers, Mr. Ferguson said.

"This condition makes it all the more imperative that our supply of existing houses be kept in adequate repair, conforming to decent standards of sanitation and health," the Commissioner asserted. "For the great majority of American families, these existing houses will represent the only housing available for the duration of the war."

In carrying out its wartime program of repair loan insurance under Title I of the National Housing Act, the Federal Housing Administration is stressing that purely luxury repairs or luxury remodeling should be postponed until after the war.

However, essential repairs necessary for sanitation or health, or for preventing decay and deterioration in existing properties, are considered appropriate purposes for loans insured under this phase of the FHA program.

If undertaken promptly, essential work of this kind usually requires the outlay of only relatively small sums, which will be repaid many times over by maintenance of values and by avoidance of the major repairs that would otherwise be required later on.

Under the War Production Board's Construction Conservation Order L-41, maintenance work and essential repairs that do not change structural design are permitted without further authorization, provided the work does not involve purchase of critical materials for which a WPB preference rating order is required. Where a preference rating is needed, application can be made in the regular manner.

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may be secured under the Title I program in amounts up to $2,500 from qualified lending institutions in all parts of the country. Such loans are repaid in equal monthly payments, with maximum terms being subject to the provisions of the Federal Reserve Board's Regulation W.

The Title I program also permits loans for remodeling or converting existing structures in the designated war industry areas to provide additional living accommodations for war workers. Loans for such purposes may involve amounts up to $5,000 with terms as long as 7 years.

NEW DUCTWORK CONSERVES METAL

Formdux, an improved ductwork which uses only 20% of the metal usually required in ducts for forced-air furnaces, has been announced by Chrysler Corporation.

"The heating industry," according to D. W. Russell, a Chrysler official, "has long been trying to find a better material which would save vitally needed sheet steel and yet provide the necessary ductwork required in heating the hundreds of thousands of homes being built this year for war workers. After months of testing, Airtemp has found a practical material —one which provides a satisfactory, low-cost duct system, while saving 4 out of 5 lbs. of the critical metal previously used."

Airtemp engineers have tested and discarded dozens of materials since the steel shortage became acute, in an effort to find one which would meet all the requirements of availability, low cost, fire safety and ease of assembly and installation by labor trained to work with metal. Airtemp is already in volume production on Formdux and will supply builders and heating contractors through jobbers or direct until jobbers are supplied.

The importance of this new ductwork is impressed when it is realized that some 300,000 of the low-cost, war workers' homes called for by the Government's 1942 housing program, must be heated with warm-air furnaces.

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WAR TIME SINK CABINET

Designed for war production plant housing projects, a new sink-cabinet combination is announced by Mutschier Brothers Company of Napanee, Indiana. In view of releasing quantities of materials for war munitions the unit involves, for the most part,

materials on which there are no restrictions.

High fired vitreous china is used for the sink bowl which is built in to a matched and bolted hard maple top. To render the top as nearly impervious to wear and use as is possible, it is impregnated with a special moisture controlling agent. The bowl is stain and acid proof, and is extremely smooth and lustrous.

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Industrial Design in Wartime
Washington National Airport

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ARCHITECT AND ENGINEER

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NEXT MONTH

CONTINUING its series of low rent housing projects in California cities, *Architect and Engineer* will feature in October the three completed projects of the Housing Authority of the City of Oakland which embraced some 922 dwelling units with an expenditure of more than $4,500,000.

The projects are known as Peralta Villa, Campbell Village and Lockwood Gardens. The two first named are in West Oakland, both classed as slum clearance projects. Lockwood Gardens cover what two years ago was a 21 acre plot of vacant land in East Oakland.

Every unit of these three projects is occupied and the Authority has a waiting list figuratively a mile long. While these improvements have helped to relieve Oakland's housing situation, there is still a tremendous demand for rentable space in the East Bay area. In fact the situation is so acute that it may be necessary to enforce compulsory evacuation of non-war workers to make room for those engaged in essential labor and who at the present time are unable to find any type of decent accommodation.

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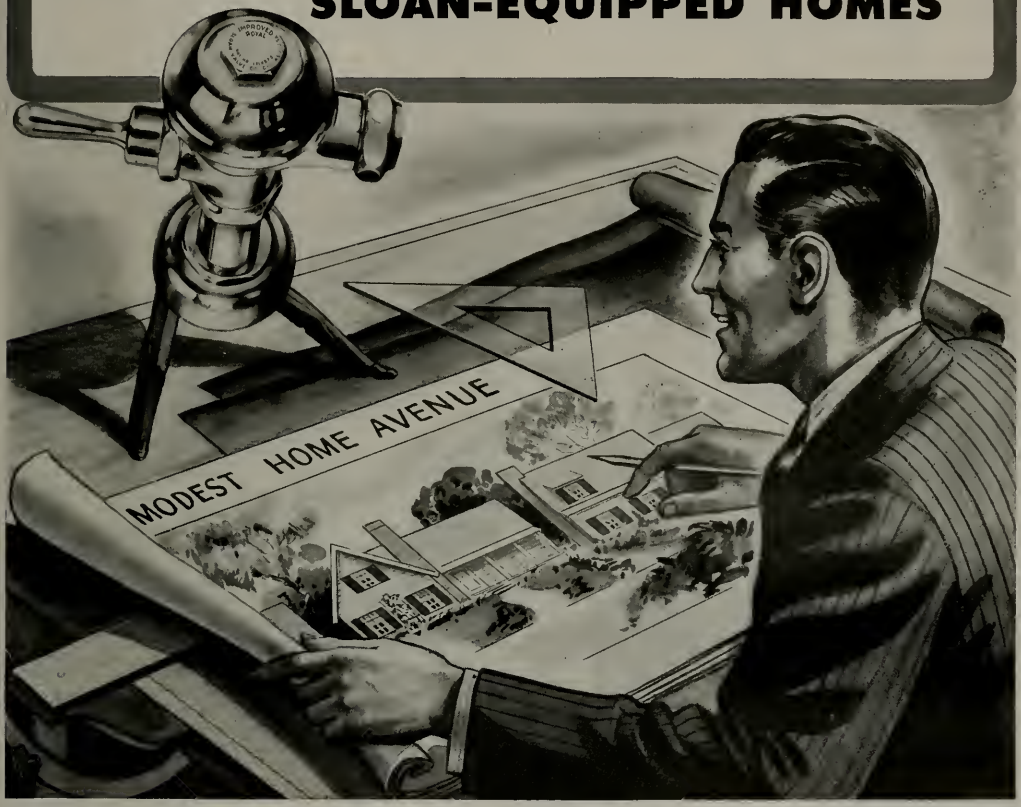

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Not always appreciated, however, is the fact that SOME flush valves save a great deal MORE water than others.

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The secret of obtaining MAXIMUM water savings from flush valves is to have the length of flush of each valve ADJUSTED to the actual water needs of the fixture on which it is installed. Fixtures vary in their water requirements and frequently as much as a gallon or more of water per flush can be saved by proper adjustment.

The tremendous EXTRA savings which individual adjustment makes possible can be judged by the fact that in a building with say—200 flush valves, an additional water saving of 1,168,000 gallons annually might be expected on the basis of one gallon saved per flush. (To judge what may be saved in other buildings, see table following).

Water saved not only means lower water bills, but also means that fuel and power—required for pumping the water—are conserved. New service manual described below will give you full data on saving with flush valves. We'll be glad to send you a copy.

Estimated annual savings of water obtainable through proper regulation of flush valve to actual water needs of fixture*

	Building with 100 Flush Valves Gallons saved	Building with 500 Flush Valves Gallons saved	Project with 1000 Flush Valves Gallons saved
When average of ½ gal. saved per flush	292,000	1,460,000	2,920,000
When average of 1 gal. saved per flush	584,000	2,920,000	5,840,000

*These savings would vary somewhat with the type of building in which the valves are installed. Figures shown at left are based on use of fixture 16 times a day.

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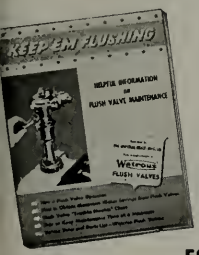

Anyone who has any interest in the specifying, installation or maintenance of flush valves should have the information contained in the new service manual —"Keep 'Em Flushing"—just published by Imperial Brass.

With simple diagrams it shows how a flush valve operates. Gives full data on how to obtain maximum water savings; shows how to reduce maintenance time to a minimum. Includes a helpful "trouble-shooter" chart; other data.

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ART MUSEUM CONTINUES ITS ACTIVITIES DESPITE WARTIME

The San Francisco Art Museum continues its cultural activities in all fields during wartime. Every Tuesday evening adults may come and try their hand at painting. Conducted by James McCray, these classes have been very popular. Skilled artists have a model to draw from and beginners are in an atmosphere propitious for the timid and even the adventurous.

ALBERT M. BENDER GRANTS-IN-AID FOR 1942

It would warm the heart of Albert M. Bender could he but hear the names of the winners of the 1942 Grants-In-Aid, which bear his name. RICHARD O'HANLON and JEANNE McGAHEY—names that hearken back to the "old sod," which he so dearly loved. Surely the ghost of St. Patrick had a hand in the decision of the juries, who selected such names for the First Annual Award of the Grants-In-Aid which commemorate the life of one who, deep rooted in the tradition of Ireland, contributed so continuously to the culture of San Francisco.

Richard O'Hanlon, who received the $750.00 award for his work in sculpture, was a student at the California School of Fine Arts from 1930 to 1933. His work had previously been recognized by the Anne Bremer award in 1933 and the Edgar Walter sculpture prize of 1940.

The award in art was limited for this year to artists working in sculpture or painting. More than 100 artists submitted their work for review by the Jury in Art, which consisted of Ralph Stackpole, Robert Howard, William Gaw, Worth Ryder and Gardner Dailey. The applicants were mature artists and the work submitted was refreshing and vital. Mr. O'Hanlon should be congratulated.

Jeanne McGahey was born and reared in Oregon, attended Oregon State College and the University of California. She has also studied intensively with private poetry groups of the Bay area.

Fourteen writers submitted material and the Jury, consisting of Professor B. H. Lehman, University of California; Professor John W. Dodds, Stanford University; Dr. Evelyn Steel Little, Mills College, were enthusiastic about the quality of work presented. From material included in a volume titled "Five Young American Poets of 1941," it is evident that Jeanne McGahey is a modern and a thorough student.

These Albert M. Bender Grants-In-Aid are the result of the spontaneous desire of Mr. Bender's friends to commemorate his life in a fitting memorial. The sums contributed are to be employed as grants to aid creative talent in the fields of Art and Literature. It is planned to make the second annual award next March 17th to coincide with the date adopted in the past by Mr. Bender's friends to celebrate his birthday.

Applications for the 1943 Grants will be released by San Francisco Art Association at an early date.

S. F. ARCHITECT HONORED IN ARMY-NAVY PRODUCTION AWARD

Army-Navy Production Award for High Achievement in the Production of War Equipment was given last month to the Chemurgic Corporation of Richmond, California. The August issue of Architect and Engineer carried an article by Eldridge T. Spencer, architect, on planning and construction for specialized industry. This article was based on the plant for which the award was given and written before publication of the award.

The theory of decentralization in planning war industries was enforced in the planning of this plant and it should be of particular interest to designers of industrial plants to find that decentralization not only insured the safety required, but also did not prevent a record for production which has received public recognition by the War Department.

Mr. Spencer, Thos. F. Chase and Alton S. Lee were all given special recognition for the excellence of their design of the Chemurgic plant at Turlock.

A PREVIEW: "THEATRE AND DANCE" SHOW OF THE MONTH AT DE YOUNG

Opening September 19 for a six-week stay is the de Young Museum's outstanding Fall exhibition, "Theatre and Dance—the Siage Through the Centuries." Through the cooperation of Prof. Wal-

PAINTING FOR PLEASURE
A class session at the San Francisco Art Museum

demar Johansen, Art and Technical Director at Stanford, Dr. George Altman, Theatre Director, Dr. Elisabeth Moses and other members of the de Young staff, this exhibit promises to be one of the most stimulating and "away-from-the-usual" the museum has offered. Diverging from the strictly art field in the accepted sense of the term and entering the world behind the footlights is a new experience for the Park exhibitors; the show itself is an innovation on this coast.

Occupying the entire "temporary" gallery space, "Theatre and Dance" includes complete major exhibits in addition to all types of material in the form of stage models, costume and stage designs, photos and photo-murals, sculpture, original costumes worn by such celebrities as the late Richard Mansfield and Rudolph Valentino, lithographs and paintings of the early theatres and the actors who played in them, an excellent collection of masks, and old theatrical programs and posters to "set the stage" for the show. Among the complete exhibits are two from the American Federation of Arts, "The American Theatre, A Glamorous Quarter-Century," a round-up in picture form of the best American plays of the last twenty-five years organized by the Associate Editor of Theatre Arts, Rosamond Gilder; and an exhibit designed and executed by Prof. Johansen, "The Development of Stage Design." A display of split-second photographs taken by Gjon Mili, "The Dance in Movement," comes from the Museum of Modern Art and from the University of Denver comes an exhibit showing the re-opening of the Central City Opera House in 1931 with a production of "Camille" starring Lillian Gish, with designs by Robert Edmond Jones. A small supplementary show, Early Theatre Life in San Francisco, will appear simultaneously in the Pioneer Gallery, one of the current "Know Your City" exhibits.

SECOND KATHERINE BALL COLLECTION SHOWN AT DE YOUNG MUSEUM

The second exhibition of Oriental art from the collection of Miss Katherine Ball, donated to the people of San Francisco, and on display last month at the de Young Museum, proved equally as interesting as the first showing of the donor's collection last April. As then, the fabrics were all from India with the silk textile emphasized rather than the cotton.

In addition to the textiles, there was an unusual showing of Hindu and Islamic miniatures, paintings collected by Miss Ball during her year's residence in India. In the group of Islamic art was exhibited the Maharajah theme of early Hindu history; a group of 20th century paintings repeating the same theme and dwelling on animal scenes.

PASSING OF DR. JOHN B. TUFTS

The local art world was shocked August 19 by announcement of the death of Dr. John B. Tufts, 73, distinguished Bay area artist. With his wife, Florence I. Tufts, the doctor exhibited his paintings many times in San Francisco and East Bay galleries. In 1940 he won the John I. Walter Memorial prize at the San Francisco Art Association's annual exhibit. Many of Dr. Tuft's most recent paintings done in oil have the Mexican background.

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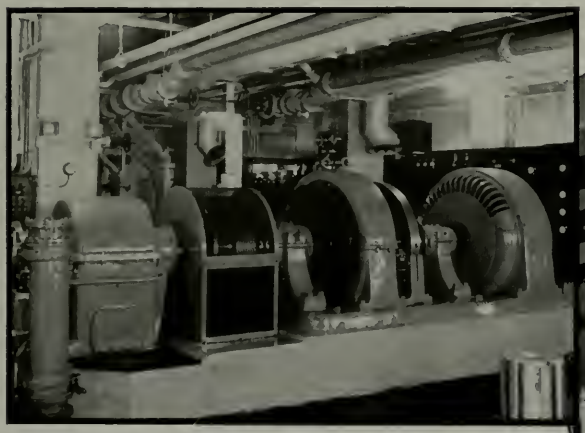

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TYPICAL APARTMENT BUILDING, PUEBLO DEL RIO HOUSING PROJECT, LOS ANGELES

PUEBLO DEL RIO

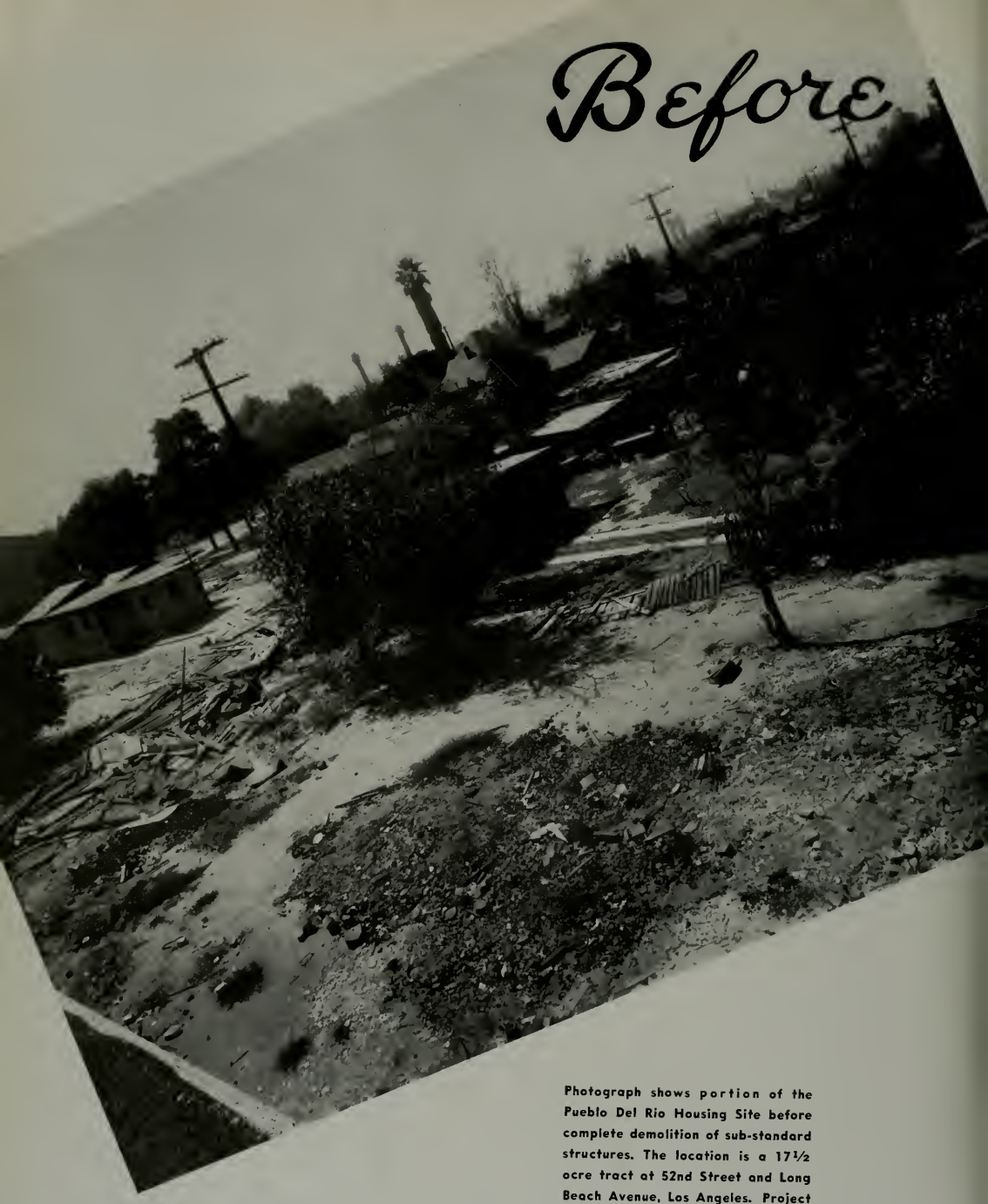
LOS ANGELES' MOST RECENT HOUSING PROJECT

By FRED'K W. JONES

When California cities joined the public housing movement several years ago, creating local Housing Authorities, the primary purpose was to clean up the slum areas and provide better accommodations for persons of low income. A number of these projects have been completed, others are in progress. But with the advent of war the Authorities find themselves providing many non-war workers with comfortable low income housing while the actual war worker is unable to find shelter of any kind. This has caused a shifting of help in many of the shipbuilding plants, greatly impairing their efficiency. Compulsory evacuation of non-war workers may be the ultimate solution which brings up the question: Will families now occupying houses built by the Authorities have to make way for those engaged in essential war work? If so it is going to cause troublous times for some families in the low income bracket. And some added grief for the Authorities.

In her latest pamphlet, "A Citizen's Guide to Public Housing," Catherin Bauer (Mrs. William Wurster) describes the progress of the Housing Authorities movement and estimates the over all cost of new public housing (including land, community facilities, professional fees, equipment and overhead) at around $4300 per dwelling, except in the southern states where the costs run as low as $3,000. "These costs," says the author, "are still not as low as they should be."

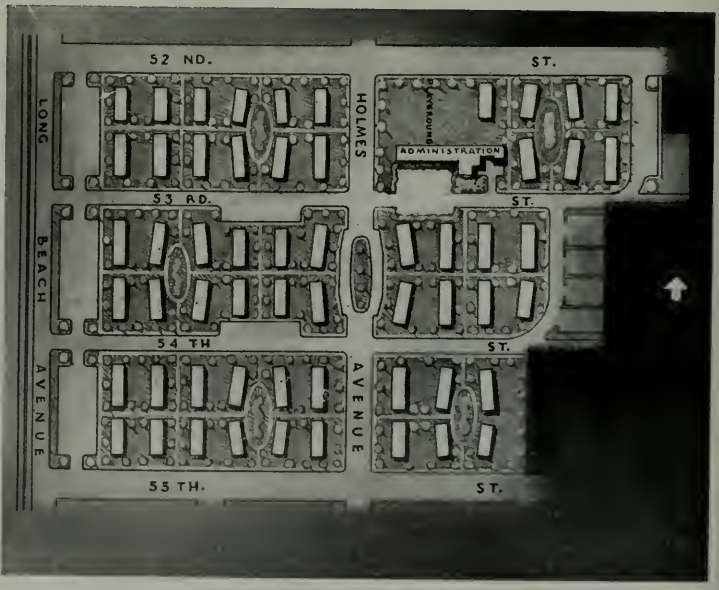
The questions have been asked: "Are the houses too good? Are the costs still too high?" In answer Miss Bauer says: "It is well to remember first of all, that flimsy building is no economy in the long run, and that sound construction is perhaps even more in the interests of the community as a whole than of the immediate tenants. Public housing projects are designed to be operated economically, above all with a minimum of upkeep and repair work. For instance, one and two story houses with private gardens are built instead of apartments, not just for social and sentimental reasons. Apartments would be slightly cheaper in first cost in many cases, but the expense of maintaining janitors and gardeners and many more central services would make



Photograph shows portion of the Pueblo Del Rio Housing Site before complete demolition of sub-standard structures. The location is a 17½ acre tract at 52nd Street and Long Beach Avenue, Los Angeles. Project was completed in record time.

Air View of Pueblo Del Rio Low Rent Housing Project as it looks today. There are 57 apartment buildings, an administration building and 82 one story flats. The architects were Paul R. Williams, Richard J. Neutra, Adrian Wilson, Gordon B. Kaufmann, Walter Wurdeman and Welton Beckett.

Architects' scale model of Pueblo Del Rio Low Rent Housing Project, Los Angeles. Note attractive landscaping



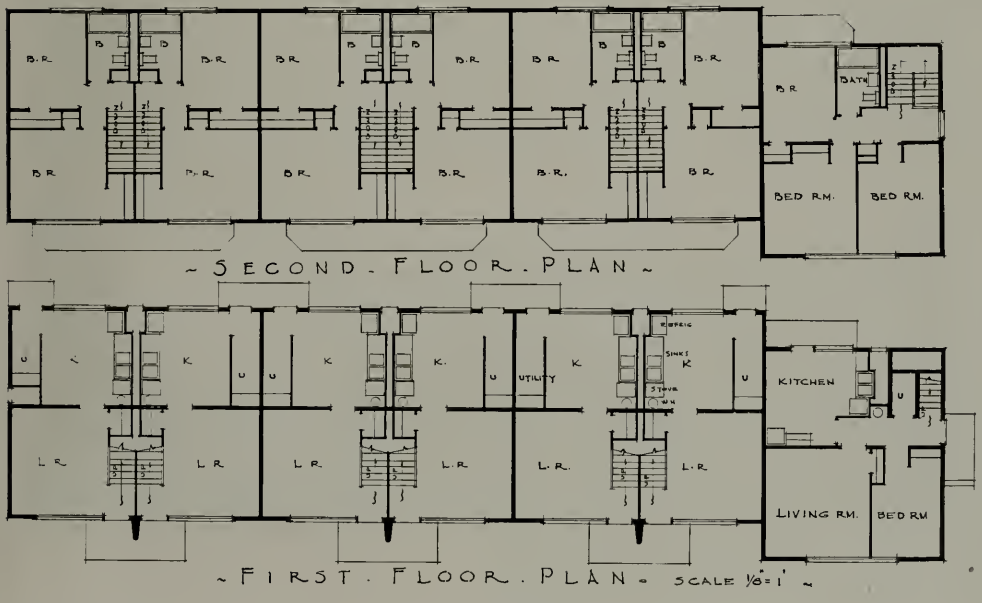
Plot Plan

Administration building, a one-story structure with masonry walls. Building may also be used for community gatherings.

Cornice Detail

Two front views of apartments in the Pueblo Del Rio Project. Living room and kitchen are on the ground floor, with bed rooms and bath above.

Landscaping contributes greatly to the general exterior appearance of the housing units



Close up of a twin apartment unit showing wide overhang flat roof and hooded entrances, the latter formed by a cantilevered extension of the second floor slab

View of apartment unit from interior of Administration Building.

Picture on the right shows concrete bottom dump bucket used to pour roof slab. Bucket is loaded from a Jaeger truck mixer.

them more costly in the long run. Similar considerations influence the choice, in most cases, of solid fire-resistant structural materials.

"As for actual costs, they are low and continuously getting lower."

Since the United States Housing Act was passed in 1937 there have been created about 500 local housing authorities, in large cities and in small towns, in suburban areas and rural counties, in almost every state in the Union, and even in Hawaii and Porto Rico. Each authority usually consists of five board members or commissioners, serving without salary.

Los Angeles Housing Authority to date has sponsored no less than nine of these low rent projects. In every instance full occupancy (many non-war workers) has been assured weeks before completion. Latest project to be completed in the South is Pueblo Del Rio, located on a 17½ acre tract at 52d Street and Long Beach Avenue, one of the city's older residential areas. Planning of this project was restricted by existing streets and the limited area, necessitating a gridiron pattern. There are 57 apartment buildings in the project. All are 26 ft. 6 in. wide and vary from 84 to 120 ft. in length. There are six, seven and eight apartments to each two story building which is constructed of brick masonry and reinforced concrete. Apartments range from three rooms to 6½ rooms each. Besides the apartment buildings the project includes 82 one story flats. All the structures face on courts with the rear yards of separate groups joined. Instead of parking areas for each group two general parking areas are provided at opposite corners of the site.

The architectural design is modern with wide overhang for the flat roofs, a characteristic feature of nearly all recent Federal housing projects. This treatment not only adds character to the buildings but provides shade for the sleeping rooms, all of which are on the second floors. Hoods are provided over the main entrances and windows are large and well spaced. Exterior walls are painted in shades of tan and off-white with a chocolate dado, a serviceable color because it will not readily show the dirt. All exteriors are waterproofed.

A number of unusual construction features give added interest to the Pueblo Del Rio project. One is the system of masonry work used for the first time in connection with this type of housing. The walls are reinforced brick, 7½ in. and 8 in. thick, with continuous reinforced concrete bond beams at the second floor and the roof. The ground floor is a 3½-in. concrete slab poured on a compacted crushed rock base 5 in. thick, insulated from moisture in the ground by Sisal-craft paper laid over the crushed rock. Underlying the base is a compacted earth fill built up from the natural ground level in layers and tamped by a sheepsfoot roller. Trenches for the foundation walls were excavated through the compacted fill to a depth of 24 in. or more below the ground level. These walls are concrete, 12 in. thick with continuous reinforcing steel and rest on a footing 18 in. wide. Backfill against the foundation walls was compacted with hand tampers. Service and soil pipes were embedded in the concrete floor and extended to the ouside walls for connections. Electrical conduits were laid underground.

The second floor is a 3-in. reinforced concrete slab supported by precast reinforced concrete joists and the roof slab, 2½ in. and 3½ in., reinforced, is similarly supported. A heavy steel mesh reinforcement was used in the slabs and extended into the hoods over entrances and the overhang of the roof.

The precast joist floor system not only made it possible to reduce the dead load of the buildings, which was desirable because of the character of the soil and foundation problems, but also facilitated construction, the contractor being able to strip the floor and roof forms, which were reused seven or eight times in three days as contrasted with a normal minimum of seven days.

Six thousand joists required for the project were furnished by the Wailes-Bageman Company which also designed and furnished the slab forms.

The brick contractor used a ramp supported by adjustable steel scaffolding to wheel brick and mortar to the second floor of the buildings. The structures are 50 to 60 ft. apart in the courts and a passageway separates the ends of adjoining buildings so it was possible to serve four with one set-up of the scaffolding. The ramp extended from the ground to a central platform half way up from which the ramp

LANDSCAPING OF PUEBLO DEL RIO

By RALPH D. CORNELL, F.A.S.L.A.
Landscape Architect

The original U. S. H. A. policy of eliminating unnecessary frills, within its housing projects, has had a restraining influence on the predominant tendency to "overstuff" the landscape planting. In the main I consider this to be wholesome and a step forward. The necessity of making every tree and shrub count to its utmost cannot but lead to directness and simplicity of treatment that is basically functional and ultimately satisfactory.

Thus the planting at Pueblo del Rio, as on the majority of such projects, is definitely simplified and limited to those things which are essential to proper enframement, enclosure and screening. Street trees, of course, have been planted and trees have been grouped at boundaries and among buildings in a way to break roof lines and create a sky-line of enclosure planting. The location of trees, within the blocks, was studied to provide shade where desirable, to permit the entrance of sun into drying yards and garden areas, and to provide screens where unbroken views were objectionable. The fact that there is an average of but one tree per dwelling unit throughout the project, including street trees, indicates the sparingness with which they were used and also suggests the importance that each tree holds in the general plan. Yet there is no dearth of trees.

Shrubs have been used a little more generously, although they average but eight plants per unit. They occur chiefly as foundation plantings at portions and front facades, and as screen plantings to hide rear yards and parking areas. The first demand placed upon them was to serve a functional need; the second demand to do that as gracefully and attractively as possible. The result should be direct, organic and, therefore, satisfying.

All front yards have been seeded to lawn, the rear yards left open. Already the latter are filled with growing vegetables and the tenants are busily engaged with the pests and problems that confront a gardener. There is no question that tenant use of rear areas is preferable to any kind of decorative treatment that might be given them otherwise.

Incidentally it is of interest that there is an average of about one-half a fruit tree to every tenant family, supplied as part of the original, permanent planting. These occur in the back yards but usually are small-growing trees that will not produce enough shade to interfere with garden crops about them. It seems like a grand theory for every tenant to have at least

(Turn to Page 46)

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branched on either side to a platform at the second floor between the ends of the buildings. Brick and mortar were wheeled up the ramp in rubber tired barrows with a helper ahead of the barrow. The steel sash for the second story was also carried up on the ramp. About 2,000,000 Groutlock brick were laid on the job.

The roof slabs which have a slight dip for drainage are covered with 4-ply roofing felt surfaced with tar and gravel.

Only the interior walls are plastered. The bottom of the second floor and roof slabs provide the finished ceiling with the precast joists partly exposed. Walls of the kitchen and bath rooms are painted. Specifications called for cement finished floors with a chemical stain in all the rooms except the bath rooms and kitchens which are covered with asphalt tile. There are tile sink counters and console gas heaters.

The partitions are two inch cement plaster on metal lath with steel studs.

The total contract construction cost of the project was $1,287,533.

Pueblo Del Rio was planned and construction supervised by Southeast Housing Architects, Associated: Paul R. Williams, Chief Architect; Richard J. Neutra, Adrian Wilson, Walter Wurdeman, Welton Becket and Gordon B. Kaufmann.

Structural Engineers, Col. E. A. Evans and Harold C. Whittelsey.

Mechanical Engineer, E. L. Ellingwood.

Landscape Architect, Ralph D. Cornell.

PHOTOGRAPH OF TRANSFORMERS AT EDISON SALVAGE YARDS, ALHAMBRA, CALIFORNIA, BY W. ELLIS TEAS

INDUSTRIAL DESIGN IN WARTIME

By ANTONIN HEYTHUM

In December of last year Architect and Engineer printed the inauguration lecture for the new Industrial Design Department of the California Institute of Technology in Pasadena. In this issue is presented some examples of the work which has been accomplished in this Department the past year, together with excerpts from the commencement address of the author, Antonin Heythum, at the close of the current semester. The theme of this address was "Industrial Design in Wartime."

ANTONIN HEYTHUM

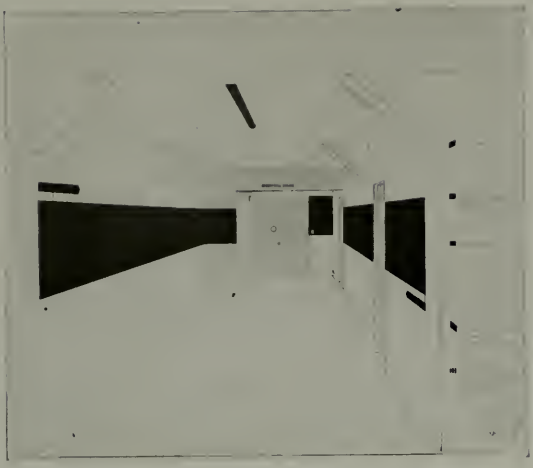
Some time ago there was a note in the papers about the seats in tanks. They were in great need of improvement, it was stated. To adapt them better to the particular services which a tank crew has to perform under the severe conditions of rough going and uncomfortable temperatures, would mean increased efficiency of performance. Instead of being distracted and fatigued by inadequate seats or other uncomfortable equipment, the crew members would be able to concentrate fully on their duties, and a well and thoughtfully designed seat in a tank or bomber would therefore certainly not be a luxury. And it is no luxury to employ the best industrial designers to assist in the design of such types of efficient comfort as would increase the quality of soldiers' performance and ease the terrific strain under which these modern heroes have to work.

In such a case the industrial designer's particular training and knowledge is of very essenital usefulness, and there are many other tasks which he is able and qualified to perform in a time of war and emergency. Production of certain essentials for civilian needs has to go on in spite of the war, but products have to be simplified for easier and more economical manufacture. They have to be redesigned in non-strategic materials. They may have to fulfill increased requirements. War machinery, housing projects, factories, have to be planned with utmost efficiency to be constructed in minimum time. The better, the more thoughtful the preliminary planning is done, the quicker and more efficient are the practical results.

In addition to a mind trained to think in terms of blueprints and perspectives, the designer, architectural and industrial alike, has acquired a wide knowledge of various design techniques which are helpful in promoting quicker understanding. Thus, for example, the cut-away drawing method now used in production illustration turns engineering blueprints into easily and quickly readable, instructive drawings which even the unskilled workman can understand.

Some production centers now fully occupied with wartime jobs are calling on industrial designers to work on projects involving problems which will arise from the later shifting from war production back to civilian production. For example, the fact that furniture factories are now converted to the manufacture of airplane parts will undoubtedly influence future furniture construction and form, and the industrial designer is asked to prepare plans for the manufacture of products for civilian needs on the basis of experience gained during the time of specialized wartime production, with the purpose in mind of making use of the new materials, new machinery and working processes.

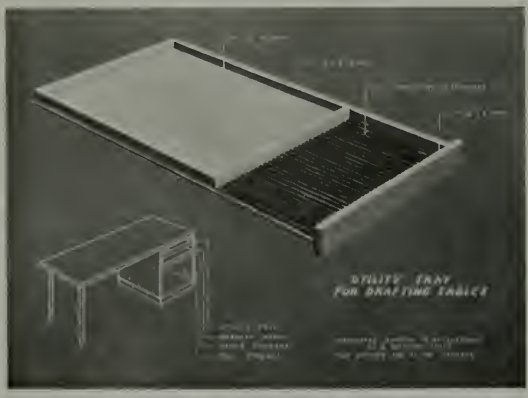
Those who think of design as a luxury which has no right or chance of being considered of any importance during a war, are people who think of architectural design in terms of colonial or Spanish facades, and of industrial design as a matter of shiny metal trimmings, patterns and superficial streamlining, of green in 1942 instead of blue in 1941. In their minds design is confused with decoration.



Photos by O. K. Harter

PROPOSED REMODELING OF HALLWAY LEADING TO THE ENTRANCE OF THE INDUSTRIAL DESIGN SECTION
(First year work)

WORKSHOP OF INDUSTRIAL DESIGN SECTION



DRAWER-TRAY FOR DRAFTING UTENSILS DESIGNED FOR STUDENTS' WORK

But industrial design very definitely means more, and means something else than decoration. (Or it certainly would not have been introduced as a subject in institutes of science and technology!)

Design means deliberate, organized planning. It means, according to the dictionary: "To produce a plan for an idea, intended to be expressed in visible form or carried into action. It stands for a purpose, as in adaptation of means to an end, towards an aim or object." The aim and object of industrial design is: ever better fulfillment of ever increasing demands, arising from human needs and ministering to human comfort and human pleasure. It means the constant planning and re-planning of all commodities of life, of objects of use and pleasure, as adapted to the facilities of modern production methods and to the possibilities offered by new materials and manufacturing processes. It aims at better products at lower costs, achieved through the means of **efficient** planning. It aims at higher standards in appearance values through means of **imaginative** planning. It aims at the invention of new products satisfying new needs or desires through means of **creative** planning, and it bases such planning upon the findings of modern science and technology, through which what we call Industrial Design has come into being.

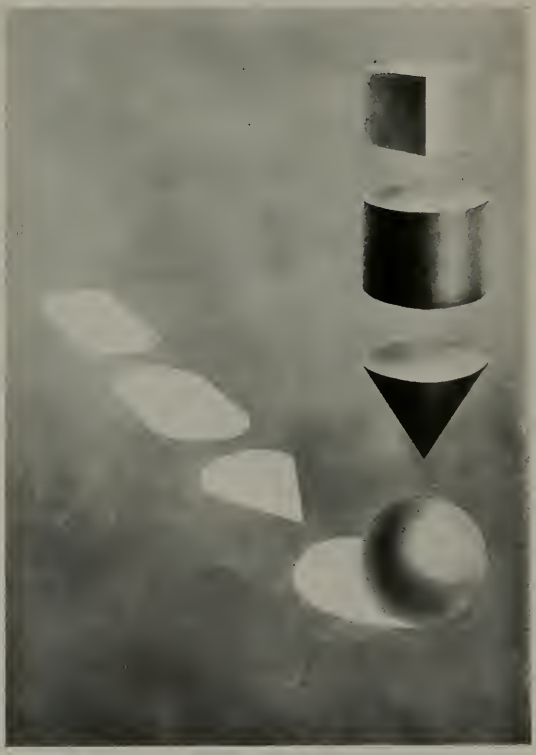
Efficient, imaginative, creative planning—does it sound like something that has no place in time of war?

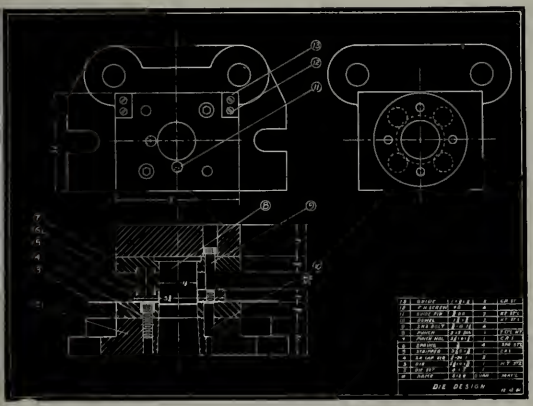
Never, perhaps, was there a greater and more urgent need for well organized planning for everything that is being done and is to be done, and for everything that is being made and is to be made! Misplanned products, as well as misplanned actions, always mean waste of energy and imply waste of material which in time of peace is deplorable, but in time of war, disastrous.

It is said that war is the greatest accelerator of scientific progress and, we may add, it certainly offers many useful lessons. Unfortunately, we tend to ignore and to forget lessons which we are taught by forced methods, but it would be wise if we could accept and remember some of them at least.

Photos by O. K. Harter

Exhibition of the work done by the students of Industrial Design Section in 1941-1942, California Institute of Technology





Upper left—Perspective drawing of collective project, kitchen equipment—second year work

Below—Die design made during short practice instruction—first year work

Above—Study of basic forms in basic colors—first year work

Photo by A. Heythum

FUNDAMENTALS OF PERSPECTIVE CONSTRUCTION DEMONSTRATED IN AN ABSTRACT COMPOSITION IN GLASS AND WIRE

Mistakes have been made in the name and under the title of Industrial Design which have highly discredited it in the eyes of critical experts and laymen alike. Superficial styling went to an extreme until the confusion which it brought into our visual surroundings began to irritate even the general public. Protests were increasing, for example, against the shiny armor of car bodies. The dazzling array pleased some owners perhaps, but hurt fellow drivers' eyes, and thus became a traffic hazard. The war brought a sudden and most welcome halt to the race for super-chromium jeweled cars, and those patriotic citizens who felt it their duty to donate the superficial trimming as salvage material were surprised to discover that their cars looked better without it. Thus they learned the lesson, which we hope the war will teach us all, that there is beauty in simplicity and straightforwardness.

If this realization should enter everybody's mind and develop into a capacity for sound critical judgment, the war would render a great service to the cause of design. By proving the value of thoughtful planning that eliminates waste of material and energy instead of supporting it, our war experiences would help to re-establish the true meaning of industrial design, and would clarify the difference between superficial, bothersome decoration and organically beautiful form. The way would then be prepared for a new understanding and appreciation of sound and honest design.

We shall keep hoping that victory in this war, which we are fighting in the name of the highest ethical ideals, will be beneficial also to our aesthetic ideals. In this spirit we must accept the lessons of this struggle, even though we might have preferred a less painful method of instruction.

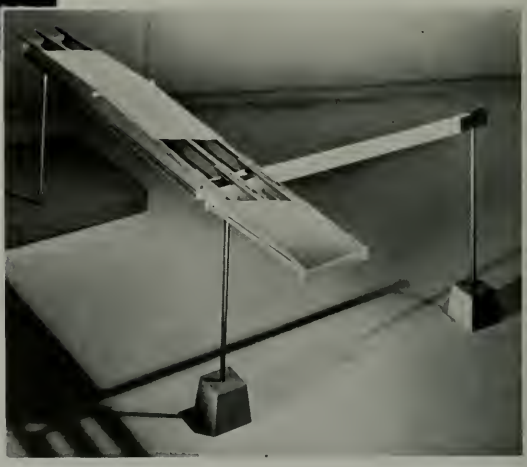


Photo by W. A. Martin

RIGID ROOF SECTION. CONSTRUCTION DETAIL OF DESIGN OF PREFABRICATED HOMES. (From thesis-wark of William Callaway)

WAR NO HINDRANCE TO STUDY OF ARCHITECTURE

Expansion of studies in architecture and archaeology continues steadily despite the war, according to the annual report of Talbot Hamlin, librarian of Avery Library of Columbia University.

"Apparently the war emergency has made less difference in the publication of serious works of research and scholarship than in other, more 'flashy' fields," Mr. Hamlin says in his report to Dr. Nicholas Murray Butler, President of the University. "Reports on excavations already made continue to be published, and moreover the scope of archaeological work and architectural study continues to broaden."

The report shows that the per cent of total expenditures for special historical publications by the library rose from 13 per cent in 1940-41 to 24 per cent in 1941-42. Included in this group is a large number of studies on South American architecture.

"During the past year," the report says, "the Avery Library has made a definite attempt to increase its holdings on Spanish American architecture and decorative arts. Little by little the problem of obtaining these is becoming simpler. Publications, especially in South American countries, are improving rapidly both in content and format, and now at last we have the beginning of a collection of which we can be proud.

"This effort will be continued; now, while the war closes to us the possibility of book purchases from enemy countries, and diminishes the amount of book publication in all of Europe, now is the ideal time to concentrate on perfecting, as far as we may be able, our collections dealing with the countries of the Americas."

Among the outstanding gifts to the library reported by Mr. Hamlin was the Upjohn Collection of more than 1,000 items, consisting of almost all the existing drawings from the offices of the noted architects Richard Upjohn (1802-1878), architect of Trinity Church in New York, and Richard Michell Upjohn (1828-1903), architect of the Hartford State Capitol.

"The Upjohn Collection is in the process of being studied and listed," the report continues. "But a few preliminary comments are already possible. It is a collection of extraordinary interest and quality. Richard Upjohn's life is well covered in Professor Everard Upjohn's "Richard Upjohn, Architect and Churchman," New York, Columbia University Press, 1939. In the design for Trinity Church, built 1839-1846, Richard Upjohn initiated a new era in American architecture, and put the Gothic Revival in church design on a firm basis.

"The Upjohn firm became the great church architects of the United States almost at once, and remained pre-eminent in that field for decades, the donor of the collection (Hobart B. Upjohn) continuing that tradition today. But the collection is by no means limited to ecclesiastic work. The firm built large numbers of houses, some business and commercial work, academies, and even railroad stations. The collection has one of its greatest values in allowing a comparative study of all the types of styles and of buildings which a busy office worked with during especially the 1840's and 1850's.

"The work of Richard Michell Upjohn is quite different in character from that of his father. The pecularities and vagaries of the so-called 'Victorian' or 'Ruskinian' Gothic controlled much of it. It is both more original and more erratic than that of the elder Upjohn. Yet some of his church towers and spires are among the finest in the country.

"The Upjohn Collection covers the work of these two men strikingly. In the earliest drawings one feels the English background dominant; little by little this English character dies away to be replaced by a new quality as Richard Upjohn gradually ceased to be an English immigrant and became a full-flegded American architect. Houses, churches, church furniture; sketches, working drawings, details — all are represented."

"Mrs. F. L. V. Hoppin presented drawings from the office of her late husband Colonel F. L. V. Hoppin (1866-1941) of the firm of Hoppin and Koen. Mrs. Oswald C. Hering gave photographs, sketches, working drawings, and details by Oswald C. Hering (1874-1941).

"The Hoppin drawings cover both municipal and private work."

OBSERVATION TERRACE, WASHINGTON NATIONAL AIRPORT, WASHINGTON, D. C.

WASHINGTON NATIONAL AIRPORT*

By MAJOR HOWARD L. CHENEY, Consulting Architect

There are few cities in America more advantageously located for a great modern airport than our national capital. The site adjoins the Mount Vernon Memorial Highway and is only three and one-quarter miles from the center of Washington, a 15-minute ride by taxi or automobile. In this location, it thus takes advantage of the most important traffic route to the various Government offices and the business district. All transportation is by motor, and the entrance approaches for private cars, taxis, public buses and sightseeing buses are so arranged as to provide easy and convenient contact with the airport. Complicated traffic movement has been reduced to a minimum.

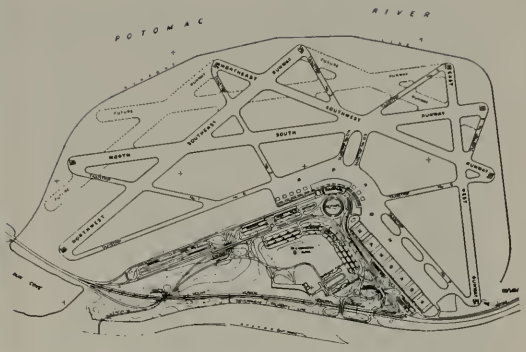
Following approval of the site by the President in September, 1938, the Civil Aeronautics Administration announced the plans for construction of the airport. Financing of the project was to be accomplished by funds from the Works Projects Administration and the Public Works Administration.

The successful results achieved in the planning and designing of the Washington National Airport is an outstanding example of the coordination between the architects, the engineering groups, and the aeronautical and technical staffs of the Civil Aeronautics Administration, as well as the airlines. It was indeed fortunate that such cooperation in formulating and developing an adequate airport program was made possible from the very beginning. The theme of the program, all the way through, has been to create a National Airport which would adequately provide for the needs of the airlines and for private aviation, as well as accommodate the general public, conveniently and efficiently. The CAA early emphasized the importance of making available for visitors ample observation spaces and parking areas because the thousands who visit the airport today only for sightseeing become tomorrow's flying enthusiasts and potential airline passengers.

PREPARATION OF MASTER PLAN

This concerted effort led to the preparation of a Master Plan, one that would give the Nation's Capital not only an ideal landing field but also provide for the fullest utilization of natural advantages possessed by the site in the present and future development of the airport; and flexible enough to permit expansion in an orderly manner from its initial to its final needs with a minimum of alteration and reconstruction. The Master Plan provides for an extension of the flying field up and down the

* From a paper read by Major Cheney at the National Airport Conference, Chicago. Photos by Orville K. Blake, by courtesy of Major Cheney.



PLOT AND FLOOR PLANS

WASHINGTON NATIONAL AIRPORT—

☆ has a total area of 729 acres of which 173 acres are utilized for buildings, approaches, planting and parking.

☆ all the buildings are of fireproof construction, employing reinforced concrete and steel.

☆ pile foundations are used under the Terminal building and hangar block. The buildings occupy what was formerly the river bank of uneven topography.

☆ there are twelve passenger plane stations along the loading ramp, placed at 120 ft. intervals. Accommodations will ultimately handle 1,000 plane schedules daily.

☆ the Terminal building has a two-level system of control, made possible by placing the entrance level for both passengers and spectators a full story above the flying field. This permits use of the entire ground floor at field level for the convenient handling and efficient circulation of baggage, air mail and air express.

☆ the entire field side of the large two story waiting room (page 32) is constructed of glass, permitting a full view of the flying field and sky above.

☆ trucking of baggage, mail and express to and from planes is handled by small power or hand trucks, with alternating baggage and passenger field exits.

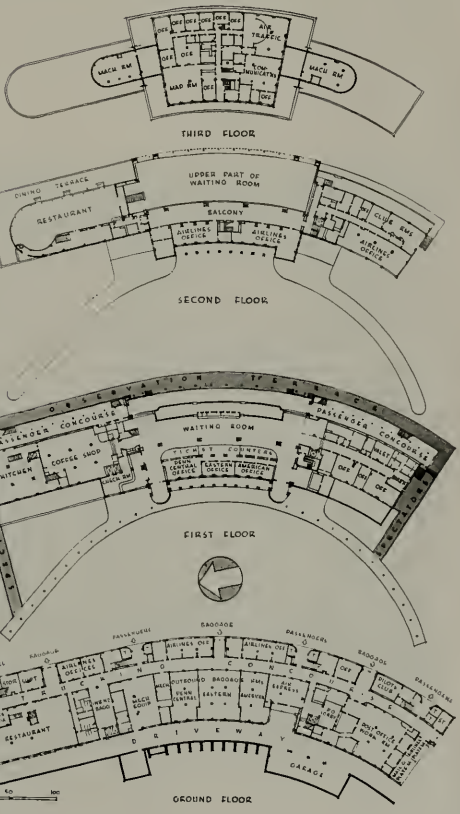
☆ control tower (over waiting room, left center) was developed after exhaustive study by the aeronautical and radio engineers for correct angles for glass wall enclosure and general shape of tower. The latter is free from daylight glares and night reflections from auto headlights.

☆ an innovation in the use of materials is the employment of carved panels of nonbreakable plate glass for the balcony rail, or observation terrace, which extends the full length of the waiting room.

☆ indirect dome lighting is used in the main waiting room and fluorescent units over the ticket counters and in the coffee shop.

☆ a public address system reaches every part of the Terminal building. Control of sound is handled by acoustically treated ceilings.

☆ the main buildings are air conditioned throughout.



All glass front waiting room, 200 feet long, occupies two floors with ticket counters extending the full length of room along the entrance side

Observation dining room on mezzanine level above the coffee shop, possessing on aviation otmosphere and a skyward view

Potomac River which will permit the North-South instrument landing runway to be extended to an ultimate length of 8,000 feet. The layout provides for the development and construction of an auxiliary system of parallel runways for future installation, to be used to handle increased traffic and make it possible for planes to land on one runway while others are taking off in the same direction from an adjacent runway. Ample provision has also been made for a large adjoining seaplane base immediately south of the present airport.

The total airport area consists of 729 acres, divided into an approximate 556 acres for the landing field and 173 acres for buildings, approaches, planting and parking areas. This area for buildings was formerly the river bank of uneven topography. The hilly character of this part of the site was used to advantage in arranging the approaches to the terminal building and in the disposition of the observation parking areas.

The landing field, proper, includes approximately 325 acres of what were tidal flats along the Virginia side of the Potomac River. These were reclaimed with dredged material. The surface was raised from 12 to 16 feet above mean low water, shoreward of an encircling levee which was constructed hydraulically. The hydraulic dredges, some of the largest in the United States, pumped 19,500,000 cubic yards of material and completed this phase of the work in the remarkably short period of one year. As the landing field, proper, was found to be located over a mud blanket six to twenty feet thick, on top of sand and gravel, adequate measures were required to produce a stable runway fill.

Conditions made it necessary to immediately place the paving on fresh fill. This resulted in the use of a flexible type of pavement for the runways which would withstand the rupture resulting from the settlement of the sand and gravel fill. It was also necessary to consider the resurfacing problem and use a material which could be readily and economically installed. Accordingly, an asphalt concrete pavement, 3½ inches thick was selected to be placed on a 9-inch mechanically stabilized subbase for the runways, taxistrips, and aprons.

From the shape of the area made available for the landing field, it was logical to develop the pattern of the runways along the lines of what is referred to as the theoretic "Duval Plan," modified to fit the surrounding topography. The four runways have excellent open aerial approaches and are of such length as to permit taking off and landing in all directions. Three sides of the landing field border on the river and can never be obstructed. The fourth is bounded by the Mount Vernon Memorial Highway which runs parallel to the Richmond, Fredericksburg and Potomac Railroad right-of-way.

At the ends of each runway are two 3000-watt floodlights focused approximately two-thirds of the length of the runway. Neon units are also installed at the runway ends. A flashing red cross signifies that the runway is not available for landings. When the runway is clear, the cross changes to a green arrow. Runways are outlined by stripes of paint impregnated with fine glass beads to reflect light. Three white stripes outline each runway edge, and two yellow stripes extend along the center lines. Smoke pots are installed on the field to indicate the direction of the wind. The field lighting consists of control lights at 200-foot intervals along all runways and taxistrips, which guide the pilots to their proper positions on the ramp.

Initially, there are 12 passenger plane stations along the loading ramp, placed at 120-foot intervals. The loading stations and the passenger concourses are so arranged, however, that they can be extended for at least a quarter of a mile, which will provide for all reasonable anticipated growth. Accommodations will ultimately handle 1,000 plane schedules a day. At each plane loading station, service pits are installed to house outlets for telephones and pneumatic tube stations. There are also pits for air-conditioning equipment, for water and batteries, with starting battery cables, as well as gasoline and oil outlets.

The terminal buildings and hangars are grouped at the base of a gentle slope rising above the landing field and within a V-shaped sector, with the terminal building at the apex of the sector, and of radial form, 540 feet long

and 20 feet deep. This was a logical location for the buildings, as the arrangement offers the least possible obstruction to flight operations. The circular entrance plaza at the west front of the terminal building and the approach roads are 14½ feet above the landing field level.

THE TERMINAL BUILDING

An outstanding feature of the terminal building is the innovation of a two-level system of control, made possible by placing the entrance level for both passengers and spectators a full story above the flying field. This permits the use of the entire ground floor at field level for the convenient handling and efficient circulation of baggage, air mail and air express. Therefore, the passengers and the spectators on the entrance floor level above, in no way interfere with the vital and rapidly moving field services. Trucks can circulate in and out of the airport along the high speed service road, at the lower level, which extends through a tunnel the full length of the building on the west.

Facing the field along the entire length of the building are placed the offices for the airline dispatchers and crews, also rooms for equipment. Inside the building, and running the entire distance from north to south, just west of the dispatchers' offices, is a trucking concourse for the airlines' electric trucks which dispatch the mail, express and baggage to and from the planes. The baggage gates along the trucking concourse are staggered with the passenger entrances to the field at intermediate locations. This makes it possible for the passengers to move diagonally in two directions from each entrance so that there is no interference between the flow of the field services and the circulation of the passengers to and from the planes. At each passenger entrance on the field, separate lobbies are provided which lead directly to the passenger concourses above. Each of these lower lobbies has separate passenger telephone and toilet facilities. Each airpline has its own separate outbound baggage room into which the baggage is chuted down from the ticket offices above after being weighed and tagged. Incoming baggage from the planes is conveyed from the ground level receiving room to the main checkroom at the north end of the waiting room by elevator service.

At the south end of the building at the field level is the President's reception room suite, which is used for distinguished guests arriving or departing by plane. The ground story also accommodates a complete Post Office, with ample loading facilities and a large workroom space for dispatching the mail. A good-sized public lobby connects with the waiting room. The air express section has a separate loading platform and work space adjacent to the airline baggage rooms. A "first aid" room, mechanical services, employees' locker rooms and utilities, kitchen service storage and receiving rooms, food service packing rooms for preparing meals to be served on the airliners, also an employees' cafeteria, are located on this floor.

Public entrance to the terminal building is from the west, passengers and visitors arriving by way of the large circular entrance plaza from whence they pass under protecting canopies which shelter the approach walks leading to the two main entrances. Normal circulation for departing passengers who arrive by taxicab, bus, or automobile, leads directly to the front of the south entrance, while passengers arriving from planes exit to waiting taxicabs directly in front of the north entrance. Sightseers are directed from the plaza across the footbridges at either end of the building which lead to the observation terrace extending for a distance of 540 feet across the entire field side of the building at a height of 10 feet above the loading ramp.

As one enters the terminal building he immediately becomes "air conscious" for the entire field side of the large two-story waiting room is constructed of glass, permitting a full view of the flying field and the sky above. This wall of glass is 200 feet long. The floor of the waiting room is stepped down in terraces behind the observation window, giving an unobstructed view not only from the seating levels for visitors but from the ticket counters which extend the full length of the room along the entrance side.

Considerable attention has been given to the easy movement of passengers in the most direct line of travel to the planes. The ticket counters are conveniently located directly adjacent to the main entrances and in close proximity to the passenger concourses. Three air-

lines are operating out of Washington at the present time—Eastern, American and Pennsylvania-Central—but it will be possible to enlarge the ticket counter space and other accommodations in the future when expansion takes place and other airlines enter this terminal.

From the ticket counters the travelers move conveniently to the north and south passenger concourses which lead directly to the plane-loading stations. The passenger concourses are reserved exclusively for travelers. They are comfortably furnished and, like the main waiting room, are faced entirely of glass along the field side, thereby permitting the passengers to see the plane-loading stations while waiting for plane time or between plane connections. The observation deck for spectators, which extends the full length of the building on the field side, is at a slightly lower level than the pasfore, the passengers and the spectators on the senqer concourse and waiting room floors.

Every effort has been made to provide accommodations for passengers in the terminal building. Barber shop and beauty parlor facilities are available, valet service, dressing and restrooms—all located on the first floor level at the south end of the building. A large public telephone room is adjacent to the ticket counters on the south; also a bookshop and newsstand, as well as a soft drink counter. An information counter and telegraph booths are in a central location. A large coffee shop is available, with lunch counter service, at the north end of the waiting room, while on the mezzanine level above the coffee shop, a spacious, observation dining room is featured, which is already distinguished for fine food, an aviation atmosphere, and a skyward view. Here, the visitor is thrilled not only by the continuous movement of planes on and off the ramp below but by the inspiring panorama of Washington, beyond, stretching from the National Cathedral on the west to the Capitol, eastward, with the Potomac River, the Naval Air Station and Bolling Field in the intermediate foreground.

The second floor of the south wing of the building is devoted to airline offices, the Airport Manager's suite, and airline club rooms. A terraced observation deck along the field side extends the full length of the south wing.

AIR-TRAFFIC CONTROL

The third story, which is located over the central portion of the building, houses a complete U. S. Weather Bureau office, the radio communications section, and the CAA air-traffic control. One of the newest and most interesting nerve centers of air-traffic control is the automatic "progress board," similar to the electric boards used in stockbrokers' offices. When a pilot reports his plane's position to his airline radio room, the coded message is teletyped on a special machine which flashes the message to a bulletin board in the flight control room. There, under the plane's flight number, are automatically recorded all flight facts, including its position, altitude, expected time of arrival at the next control point, and the expected time of arrival at its destination. In the adjoining communications room a battery of 20 of the most modern teletype machines connect Washington with the Nation-wide teletype communications system. A section of this "progress board" is repeated in the control tower, and on this section, the time of arrival of the next 20 planes due is shown for the information of the control tower operator, who directs the landing of all planes at the field. The operator is also in continual interphone connection with nearby Army's Bolling Field and the Naval Air Station at Anacostia to synchronize the approach and landing of military planes with commercial transport traffic.

The control tower on top of the building is directly above the third story and at a center position on the field side. This tower design was developed after exhaustive study by the aeronautical and radio engineers of the CAA Airport Section. Considerable credit should be given to Mr. Cory Pearson, CAA engineer, who made intensive studies of the correct angles for the glass wall enclosure of the tower and recommended the shape adopted as the most efficient to eliminate, not only daylight glares, but also the troublesome night reflections from glaring automobile headlights along the nearby highways and approach roads. The tower was planned to a minimum of width, and

the operator's position is one that gives him not only a clear view of every plane-loading station on the ramp, the entire length of each runway and the hangar apron, an unobstructed horizon, but also vertical visibility, made possible by the sloping upper section of the glass. Large automatic wipers keep the glass clean during inclement weather. Solex, a green-tinted heat-resisting glass, was installed, which also cuts out the sun's actinic rays. The radio equipment in the tower and the control board are the very latest in types of equipment. Surrounding the tower, at a level two feet below the tower floor, is a catwalk directly accessible from the tower and from a platform at the rear, permitting visitors to circle the tower and observe flight control operation without obstructing the operator's vision.

The hangars are placed at the foot of a bluff in a southwest direction from the terminal building and 500 feet away. They are located in an area which offers the least hazard to flight and without detracting from the architectural scale of the terminal building.

Between hangars are intermediate shops, 52 feet wide and 193 feet long. A shop section, 30 feet wide, also extends across the hangars at the rear. This continuous shop section along the north side of the hangars has been designed to include an office structure above for the airlines.

The terminal building and hangars are designed in a contemporary style of architecture. They are of modern, fireproof construction, adequately air-conditioned and ventilated. Their streamlined forms symbolize and express functionally this modern mode of air transportation the buildings must serve.

Architectural concrete was used as an exterior building material both for the terminal building and hangars. In the terminal building exposed aggregate concrete slabs are employed for wall facing in the waiting room and public spaces. The passenger concourses and main public checkroom are faced with matt glazed terra cotta. Acoustical ceilings are provided in all public spaces to assure satisfactory performance of the public address system. Doors, trim, lighting fixtures, and ornamental metal are executed in aluminum, with floors and stairs of public spaces in terrazzo. The ticket and baggage counters are of stainless steel. One of the innovations in the use of materials is the employment of carved panels of nonbreakable plate glass for the balcony rail which extends the full length of the waiting room.

It is hoped that not only will the advanced architectural and engineering techniques developed for this project prove to be a step forward in airport planning but that the aesthetic demands imposed upon this, the Washington National Airport, will be recognized as having been achieved.

ARCHITECTS' BULLETIN

Issued For

THE STATE ASSOCIATION OF CALIFORNIA ARCHITECTS

Northern Section

STATE ASSOCIATION MEMBER
OF THE
AMERICAN INSTITUTE OF ARCHITECTS

Editor

Harris C. Allen

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ANNUAL CONVENTION

The convention committee of the State Association of California Architects consists of Vincent Raney, chairman, and the following members: John F. Beuttler, San Francisco; Lawrence W. Gentry, Carmel; Edward L. Frick, San Francisco; Irwin M. Johnson, Oakland; Robert R. Jones, Carmel; Thomas J. Kent, San Francisco; Edward B. Page, San Francisco; C. Jefferson Sly, San Francisco; and Robert Stanton, Del Monte.

(Heven grant that the moths have spared Raney's regalia—

"Oh come, little children,
and you shall hear
Of the Gorgeous Sight
When Vince draws near.")

The convention will be held at Del Monte, as determined at the 1941 convention, and will function October 8th, 9th and 10th. The program is naturally devoted largely to the war effort, and subjects discussed will concern Architects and War Housing, Camouflage, and Post-War Planning. Eugene Weston, Regional Director of the National Housing Agency, will be one of the principal speakers. (Many of us know Gene well, through the medium of previous S.A.C.A. conventions.) Other speakers will be Mr. Deming Tilton, Regional Director of the National Resources Planning Board, and Mr. Pierce Williams, Regional Director of the Federal Works Agency.

A group of Southern California architects are outlining an interesting program to deal with Camouflage—on which subject they are said to be experts (perhaps these gentlemen are from Hollywood). Within the next few months, this may become an important activity, indeed.

Legislative problems are on the agenda for discussion, in preparation for post-war activities, which will be pressing and important. In time of war, prepare for peace.

But in general the convention this year will be a conference on ways for architects to help "Win the War," and it is believed that the more our members can pull together and participate in planning, the greater will be their value for the national effort. This should be the most earnest convention in the history of our Association—although there will undoubtedly be a little off-the-record recreation. And that is as it should be; for we must hold on to our sense of perspective, and morale is even more important than morals.

Golf is always available at Del Monte, and we understand that the Women's Auxiliaries are planning activities for convention days, under the direction of Mrs. Harold Weeks in San Francisco and Mrs. Irwin Johnson in the East Bay Section.

Hotel Del Monte rates are remarkably reasonable this year, ranging from $5.50 to $7.50 per day on the American plan. This is, if anything, lower than in recent years, in spite of the increased cost of living. There are a number of hotels and inns in communities near Del Monte, where rooms have been

available at reasonable rates. For delegates not stopping at the Hotel Del Monte, meals are $1.50 for breakfast and luncheon, $2.00 for dinner.

Members in Service

More news comes in about the activities of our members in public service. In addition to the list published in our July Bulletin, are the following names:

James H. Anderson, Irving F. Brown and Alfred C. Williams—Federal Public Housing Authority.

Frederick W. Quandt—U. S. Department of Agriculture, Farm Security Administration.

Arthur Jory and Edward Nickel—Public Works Office, U. S. Navy, Civilian Branch. (Correction—C. Jefferson Sly is Lt. Commander in the Navy, not Captain in the Army.)

In the Office of Civilian Defense, Fred L. Confer heads the Department of Protective Concealment, in the division of Property Protection under William L. Pereira, Southern California architect.

(Correction—W. Clement Ambrose is not in Washington, but busy with government work in San Francisco.)

Advisory Meetings

According to the amendments adopted last year to the By-Laws, the District Advisors, voting by Districts, approximately one month before the convention, are to nominate the officers and directors for the ensuing year; election to be by letter ballot on forms mailed to all members of each Section not less than 15 days prior to the convention.

Delegates to the convention are to be elected by each District and each is entitled to one vote. Districts are entitled to one delegate for each ten members or fraction thereof, as recorded in the District 60 days prior to the date fixed for the convention. Districts may elect any other delegate qualified to vote to cast their total number of votes as their representative, if none of their own delegates can be present.

PLANNERS TO MEET IN LOS ANGELES

Centering on the theme "California Must Plan Now," the Second Annual Conference of the California Housing & Planning Association will be held September 24 to 26, at Los Angeles. Hotel Mayfair has been selected as Conference headquarters.

In addition to thorough discussion of war housing and other current planning problems, sessions will be devoted to laying down the broad outlines of a "Postwar Program for California," to include: Urban Redevelopment and Master Planning; Social-Economic Planning of Central Valley Project; Rehabilitating Rural Communities and Rehousing Agricultural Labor; and Postwar Industrial Conversion.

Speakers invited to give substance and direction to the phrase, "Postwar Planning," include George Yantis, planning leader in the Northwest and member of the National Resources Planning Board; John B. Blandford, Administrator, National Housing Agency; Walter Blucher, Executive Director, American Society of Planning Officials; Harlan H. Barrows, Bureau of Reclamation's Chief Central Valley Planner; Boris Shishkin, Economist, AFL; V. B. Stanbery, National Resources Planning Board; Langdon Post, Federal Public Housing Authority; Charles B. Bennett, Los Angeles City Planning Commission; Philip Connelly, CIO; C. J. Haggerty, AFL; Carey McWilliams; Walter Packard; and Arthur Coons.

Many persons recalling CHPA's first Annual Conference at Santa Barbara last fall are planning to attend this year.

SOUTHERN CALIFORNIA CHAPTER

A program of exceptional interest featured the last regular monthly meeting of Southern California Chapter, A.I.A., at the Hotel Clark September 8. Divided into three parts the program was of timely interest: (1) War Effort and Civilian Defense"; (2) "Long Range and Post-war Planning"; (3) "Public Relations to Make Our Work Effective."

Other features included Sumner Spaulding's impressions of his recent trip to Mexico which country would seem destined to play a larger role in our lives than heretofore.

Cassatt Griffin, acting chief engineer of the Los Angeles County Department of Building Safety, gave a short talk on "Camouflage and Civilian Defense."

Newly elected associate members are Joseph E. Trudeau and Chester R. Phillips; junior associates: Delbert Long and Carlton M. Winslow, Jr. All received their certificates of membership at the September meeting.

Word has been received that Gordon B. Kaufmann, Fellow and former Regional Director, is now a Lt. Colonel in the Chemical Warfare Division.

Bob Alexander has been appointed chairman of the public relations committee, taking the place of Don Kirby.

WASHINGTON PENTAGON

Cost of the war department's new Pentagon building headquarters in Washington will be around $35 million, but it will save the government $4 million a year now being paid for rent in 17 or more Washington buildings. The building foundations are some 40,000 piles. It will have over 15,000 windows. At peak employment, 13,000 workmen were on the job. Three construction firms shared the contract for building. The floor space will be over 4 million square feet, 2.6 million of it for office space, the rest accessories. U. S. Corps of Engineers is bossing the job. Architect was George Edwin Bergstrom of Los Angeles. To get earth for fills in landscaping, Potomac River was widened 150 feet in front of the building, so that George Washington or Walter Johnson wouldn't be able to sling a dollar across it now.—Ironwood, Mich. "Globe."

WHAT TO READ

PROCEDURE HANDBOOK OF ARC WELDING DESIGN AND PRACTICE, seventh edition, published by The Lincoln Electric Company, Cleveland, Ohio; 1,308 pages, 6 x 9 inches, 1,810 illustrations, including photos and drawings; cover, semi-flexible simulated leather, gold embossed; price postpaid United States $1.50 per copy, elsewhere $2.00 per copy.

Greatly enlarged, the seventh edition of the Procedure Handbook, just published, takes on a new significance this year.

This "Bible of the arc welding industry," as it is frequently called, is now playing the role as a "manual of arms" for an ever-growing host of workmen who have turned to welding to defeat the Axis powers on the industrial front.

The book explains more fully than ever before the various methods and techniques used in welding, with a view to speeding up welding design and engineering and to make it easier for the thousands of men in training to learn the essentials of welding in the shortest possible time.

Illustrated exhaustively and clearly is the chapter on "Typical Applications of Arc Welding." Large numbers of these new applications have been developed during the past year in the many fields of war production.

New and significant information is given in the new Handbook on such subjects as welding symbols, new allowable stresses, preheating for welding, stress relieving, procedures, speeds and costs, "Fleet-Fillet" technique, general metallurgical characteristics of metals and alloys, weldability of aluminum alloys, tubular construction, appearance and styling of welded design and many others.

HOW TO REMODEL A HOUSE, by J. Ralph Dalzell and Gilbert Townsend. 528 pages, 318 illustrations (3 pages in colors). Published by American Technical Society, Drexel Avenue at 58th Street, Chicago, Ill. Price $4.75.

Remodeling has been growing in importance during the past few years and today, because of restrictions on new houses, it is of more importance than ever. This is undoubtedly the most comprehensive book yet written on the remodeling of houses. It is a "how to do it" book in every detail and will be of value to the home owner, the workers on the building and the architect. It is beautifully illustrated, including three full pages in four colors.

Following is a summary of the contents of the book: Types of House Architecture. How to Read Architectural Plans. Specifications. Fundamentals of Remodeling. How to Select Architectural Types. Architectural Drawings. Structural Details. Stairs. Insulation. Selection of Materials. Bathrooms. Remodeling Kitchens. Heating and Air-Conditioning. Electric Lighting and Wiring. Remodeling Rooms. Floor Plans and Elevations.

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Estimator's Guide

Giving Cost of Building Materials, Wage Scale, Etc.

Amounts given are figuring prices and are made up from average quotations furnished by material houses to San Francisco contractors. 3% Sales Tax on all materials but not labor.

All prices and wages quoted are for San Francisco and the Bay District. There may be slight fluctuation of prices in the interior and southern part of the state. Freight cartage, at least, must be added in figuring country work.

Bond—1½% amount of contract.
Government work ¾%.

Brickwork—

Common, $40 to $45 per 1000 laid, (according to class of work).
Face, $90 to $100 per 1000 laid, (according to class of work).
Brick Steps, using pressed brick, $1.00 lin. ft.
Brick Veneer on frame buildings, $1.00 sq. ft.
Common f.o.b. cars, $15.00 at yard. Cartage extra.
Face, f.o.b. cars, $40.00 to $60.00 per 1000, carload lots.

Building Paper—

1 ply per 1000 ft. roll	$3.50
2 ply per 1000 ft. roll	5.00
3 ply per 1000 ft. roll	6.25
Brownskin, Standard, 500 ft. roll	5.00
Sisalkraft, 500 ft. roll	5.00
Sash cord com. No. 7	$1.20 per 100 ft.
Sash cord com. No. 8	1.50 per 100 ft.
Sash cord spot No. 7	1.90 per 100 ft.
Sash cord spot No. 8	2.25 per 100 ft.

Sash weights, cast iron, $50.00 ton.
Nails, $3.50 base.
Sash weights, $45.00 per ton.

Concrete Aggregates—

GRAVEL (all sizes) $1.45 per ton at bunker; delivered to any point in S. F. County $1.85.

	Bunker	Delivered
Top sand	$1.45	$1.85
Concrete mix	1.45	1.85
Crushed rock, ¼ to ¾	1.60	2.00
Crushed rock, ¾ to 1½	1.60	2.00
Roofing gravel	1.60	2.00
City gravel	1.45	1.85
River sand	1.50	1.90

Bank sand—$1.00 per cubic yard at bunker or delivered.

SAND—	Bunker	Delivered
River sand	$1.50	$1.85
Lapis (Nos. 2 & 4)	2.00	2.40
Olympia Nos. 1 & 2	1.80	2.20
Healdsburg plaster sand	$1.80 and $2.20	
Del Monte white	50c per sack	

Common cement (all brands, paper sacks) carload lots $2.52 per bbl. f.o.b. car; delivered, $2.80; less than carloads delivered, 70c per sack.
Cash discount on carload lots, 10c a barrel, 10th Prox.; cash discount less than carload lots, 2%.

Atlas White, Calaveras White, Medusa White } 1 to 100 sacks, $2.00 sack, warehouse or delivery.

Forms, Labors average $40.00 per M.
Average cost of concrete in place, exclusive of forms, 35c per cu. ft.; with forms, 60c.
4-inch concrete basement floor ..... 12½c to 14c per sq. ft.
Rat-proofing 7½c
Concrete Steps ..... $1.25 per lin. ft.

Dampproofing and Waterproofing—

Two-coat work, 20c to 30c per yard.
Membrane waterproofing—4 layers of saturated felt, $4.50 per square.
Hot coating work, $2.00 per square.
Medusa Waterproofing, 15c per lb., San Francisco Warehouse.
Tricocel waterproofing.
(See representative.)

Electric Wiring—$12.00 to $15.00 per outlet for conduit work (including switches).
Knob and tube average $3.00 per outlet.

Elevators—

Prices vary according to capacity, speed and type. Consult elevator companies. Average cost of installing an automatic elevator in four-story building, $2800; direct automatic, about $2700.

Excavation—

Sand, 60 cents; clay or shale $1 per yard.
Teams, $12.00 per day.
Trucks, $22 to $27.50 per day.
Above figures are an average without water. Steam shovel work in large quantities, less; hard material, such as rock, will run considerably more.

Fire Escapes—

Ten-foot galvanized iron balcony, with stairs, $150 installed on new buildings; $160 on old buildings.

Floors—

Composition Floors—22c to 40c per sq. ft.
In large quantities, 18c per sq. ft. laid.
Mosaic Floors—80c per sq. ft.
Duraflex Floor—23c to 30c sq. ft.
Rubber Tile—50c to 75c per sq. ft.
Terazzo Floors—45c to 60c per sq. ft.
Terazzo Steps—$1.60 lin. ft.

Hardwood Flooring (delivered to building)—

	⅜x2¼" T&G	⅜x2" T&G	⅝x2" Sq.Ed.
Clr. Otd. Oak	$144.00 M	$122.00 M	$141.00 M
Sel. Otd. Oak	118.00 M	101.00 M	114.00 M
Clr. Pla. Oak	120.00 M	102.00 M	115.00 M
Sel. Pla. Oak	113.00 M	92.00 M	107.00 M
Clr. Maple	125.00 M	113.00 M	

Wage—Floor layers, $12.00.
Note—Above quotations are all board measure except last column which is sq. ft.

Glass (consult with manufacturers)—
Double strength window glass, 20c per square foot.
Plate 80c per square foot (unglazed) in place, $1.00.
Art, $1.00 up per square foot.
Wire (for skylights), 40c per sq. foot.
Obscure glass, 30c to 50c square foot.
Glass bricks, $2.50 per sq. ft. in place.
Note—if not stipulated add extra for setting.

Heating—
Average, $1.90 per sq. ft. of radiation, according to conditions.
Warm air (gravity) average $48 per register.
Forced air, average $68 per register.

Iron — Cost of ornamental iron, cast iron, etc., depends on designs.

Lumber (prices delivered to bldg. site)—

No. 1 common	$43.00 per M
No. 2 common	41.00 per M
Select O. P. common	46.00 per M
2x4 No. 3 form lumber	32.00 per M
1x4 No. 2 flooring VG	90.00 per M
1x4 No. 3 flooring VG	85.00 per M
1x6 No. 2 flooring VG	96.00 per M
1¼x4 and 6, No. 2 flooring	95.00 per M

Slash grain—

1x4 No. 2 flooring	$65.00 per M
1x4 No. 3 flooring	62.00 per M
No. 1 common run T. & G	48.00 per M
Lath	7.50 per M

Shingles (add cartage to price quoted)—

Redwood, No. 1	$1.20 per bdle.
Redwood, No. 2	1.00 per bdle.
Red Cedar	1.45 per bdle.

Plywood—Douglas Fir (add cartage)—
"Plyscord" sheathing (unsanded)
⅜" 3-ply and 48"x96" ..... $39.75 per M
"Firwall" (wallboard grade)—
¼" 3-ply 48"x96" ..... $43.70 per M
"Plyform" (concrete form grade)—
⅝" 5-ply 48"x96" ..... $117.30 per M
Exterior Plywood Siding—
⅜" 5-ply Fir ..... $132.00 per M
Redwood (Rustic) 1"x8" clear heart.. $ 95.00 per M
$5 less per M for A grade.

Millwork—Standard.
O. P. $100 per 1000. R. W. rustic $120.00 per 1000 (delivered).
Double hung box window frames, average with trim, $6.50 and up, each.
Complete door unit, $10.00.
Screen doors, $3.50 each.
Patent screen windows, 25c a sq. ft.
Cases for kitchen pantries seven ft. high, per lineal ft., $8.00 each.
Dining room cases, $8.00 per lineal foot.
Rough and finish about 75c per sq. ft.
Labor—Rough carpentry, warehouse heavy framing (average), $17.50 per M.
For smaller work average, $35.00 to $45.00 per 1000.

Marble—(See Dealers)

Painting—

Two-coat work	per yard 50c
Three-coat work	per yard 70c
Cold water painting	per yard 10c
Whitewashing	per yard 4c

Turpentine, 65c per gal., in 5 gal. cans, and 55c per gal. in drums.
Raw Linseed Oil—95c gal. in light drums.
Boiled Linseed Oil—98c gal. in drums and $1.08 in 5 gal. cans.

White Lead in oil

Per Lb.
1 ton lots, 100 lbs. net weight.....11¾c
500 lbs. and less than 1 ton.....12c
Less than 500 lb. lots.....12½c

Red Lead and litharge

1 ton lots, 100 lbs. net weight.....11¾c
500 lbs. and less than 1 ton.....12c
Less than 500 lb. lots.....12½c

Red Lead in oil

1 ton lots, 100 lbs. net weight.....12¾c
500 lbs. and less than 1 ton.....13c
Less than 500 lb. lots.....13½c
Note—Accessibility and conditions cause some variance in costs.

Patent Chimneys—

6-inch .....$1.25 lineal foot
8-inch ..... 1.50 lineal foot
10-inch ..... 2.25 lineal foot
12-inch ..... 3.00 lineal foot

Plaster

Neat wall, per ton delivered in S. F. in paper bags, $17.60.

Plastering—Interior—

Yard
1 coat, brown mortar only, wood lath.....$0.50
2 coats, lime mortar hard finish, wood lath .85
2 coats, hard wall plaster, wood lath..... .72
3 coats, metal lath and plaster..... 1.25
Keene cement on metal lath..... 1.30
Ceilings with ¾ hot roll channels metal lath (lathed only) ..... .90
Ceilings with ¾ hot roll channels metal lath plastered 1.80
Single partition ¾ channel lath 1 side (lath only ..... .85
Single partition ¾ channel lath 2 inches thick plastered $2.90
4-inch double partition ¾ channel lath 2 sides (lath only)..... 1.70
4-inch double partition ¾ channel lath 2 sides plastered 3.30
Thermax single partition; 1" channels; 2¼" overall partition width. Plastered both sides 2.50
Thermax double partition; 1" channels; 4¾" overall partition width. Plastered both sides 3.40
3 coats over 1" Thermax nailed to one side wood studs or joists..... 1.25
3 coats over 1" Thermax suspended to one side wood studs with spring sound isolation clip 1.45

Plastering—Exterior— Yard
2 coats cement finish, brick or concrete wall $1.00
3 coats cement finish, No. 18 gauge wire mesh 1.75
Wood lath, $5.50 to $6.50 per 1000.
2.5-lb. metal lath (dipped) ..... .19
2.5-lb. metal lath (galvanized) ..... .21
3.4-lb. metal lath (dipped) ..... .22
3.4-lb. metal lath (galvanized) ..... .24
¾-inch hot roll channels, $72 per ton.
Finish plaster, $18.90 ton; in paper sacks.
Dealer's commission, $1.00 off above quotations.
$13.85 (rebate 18c sack).
Lime, f.o.b. warehouse, $2.25 bbl.; cars, $2.15
Lime, bulk (ton 2000 lbs.), $16.00 ton.
Wall Board 5 ply, $50.00 per M.
Hydrate Lime, $19.50 ton.
Plasterers Wage Scale.....$1.67 per hour
Lathers Wage Scale..... 1.60 per hour
Hod Carriers Wage Scale..... 1.40 per hour

Composition Stucco—$1.80 to $2.00 sq. yard (applied).

Plumbing—

From $100.00 per fixture up, according to grade, quantity and runs.

Roofing—

"Standard" tar and gravel, $7.00 per sq. for 30 sqs. or over.
Less than 30 sqs. $7.50 per sq.
Tile, $20.00 to $35.00 per square.
Redwood Shingles, $7.50 per square in place.
Copper, $16.50 to $18.00 per sq. in place.
5/2 #1-16" Cedar Shingles, 4½" Exposure ..... 8.00 Square
5/8 x 16" — #1 Cedar Shingles, 5" Exposure..... 9.00 Square
4/2 #1-24" Royal Shingles, 7½" Exposure ..... 9.50 Square
Re-coat with Gravel, $3 per sq.
Asbestos Shingles, $15 to $25 per sq. laid.
Slate, from $25.00 per sq., according to color and thickness.
1/2 x 25" Resawn Cedar Shakes, 10" Exposure 10.50
3/4 x 25" Resawn Cedar Shakes, 10" Exposure 11.50
1 x 25" Resawn Cedar Shakes, 10" Exposure 12.50
Above prices are for shakes in place.

Sheet Metal—

Windows—Metal, $1.75 a sq. ft.
Fire doors (average), including hardware, $1.75 per sq. ft.

Skylights—(not glazed)

Copper, 90c sq. ft. (flat).
Galvanized iron, 40c sq. ft. (flat).
Vented hip skylights 60c sq. ft.

Steel—Structural (None available except for defense work)

$150 ton (erected), this quotation is an average for comparatively small quantities. Light truss work higher. Plain beams and column work in large quantities $140 per ton.

Steel Reinforcing (None available except for defense work).

$150 to $200 per ton, set.

Stone—

Granite, average, $6.50 cu. foot in place.
Sandstone, average Blue, $4.00. Boise, $3.00 sq. ft. in place.
Indiana Limestone, $2.80 per sq. ft. in place.

Store Fronts—

Copper sash bars for store fronts, corner, center and around sides, will average $1.00 per lineal foot.
Note—Consult with agents.

Tile—Floor, Wainscot, etc. — (See Dealers)

Asphalt Tile—18c to 28c per sq. ft. installed.

Wall Tile—

Glazed Terra Cotta Wall Units (single faced) laid in place—approximate prices:
2 x 6 x 12.....$1.00 sq. ft.
4 x 6 x 12..... 1.15 sq. ft.
2 x 8 x 16..... 1.10 sq. ft.
4 x 8 x 16..... 1.30 sq. ft.

Venetian Blinds—

40c per square foot and up. Installation extra.

Windows—Steel

Factory type sash 30c ft.
Ventilators for steel sash $5.00 each.

1942 BUILDING TRADES WAGE SCALES FOR NORTHERN CALIFORNIA

*6-hour day **7-hour day

CRAFT	San Francisco	Alameda	Fresno	Marin	Sacramento	San Jose	San Mateo	Vallejo	Stockton
ASBESTOS WORKERS	$1.50	$1.25	$1.25	$1.37½	$1.12½	$1.25	$1.25	$1.25	$1.25
BRICKLAYERS	* 1.75	* 1.75	* 1.50	* 1.75	* 1.75	* 2.00	* 1.79-1/6	* 1.75	* 1.75
BRICKLAYERS' HODCARRIERS	* 1.35	* 1.25	* 1.05	* 1.25	* 1.05	* 1.35	* 1.35	* 1.40	* 1.14
CARPENTERS	1.37½	1.37½	1.25	1.37½	1.25	1.25	1.37½	1.25	1.25
CEMENT FINISHERS	1.37½	1.37½	1.25	1.25	1.25	1.50	.....	1.25	1.25
ELECTRICIANS	1.50	1.50	1.50	1.37½	1.50	1.50	1.50	1.50	1.37¼
ELEVATOR CONSTRUCTORS	1.61	1.56	1.50	1.61	1.61	1.50	1.50	1.56	.....
ENGINEERS: Material Hoist	1.50	1.37½	1.25	1.50	1.37½	1.62½	1.37½	1.37½	1.25
Piledriver	1.75	1.60	1.60	1.75	1.75	1.75	1.62½	1.75	.....
Structural Steel	1.75	1.60	1.60	1.75	1.75	1.75	.....	1.60	1.60
GLASS WORKERS	1.25	1.25	1.12½	1.25	1.12½	1.21	1.25	1.25	.....
IRONWORKERS: Ornamental	1.50	1.31¼	1.37½	1.31¼	1.37½	1.31¼	1.25	1.31¼	.....
Reinf. Rodmen	1.50	1.31¼	1.31¼	1.31¼	1.31¼	1.60	1.31¼	1.31¼	1.25
Structural	1.75	1.60	1.60	1.60	1.60	1.75	1.50	1.60	1.37½
LABORERS: Building	.85	.87½	.82½	.81¼	.85	.81¼	81¼	.81¼	.80
Concrete	.87½	.93¾	.90	.81¼	.92½	.....	.85	.90	.90
LATHERS	* 1.75	* 1.75	* 1.50	* 1.75	* 1.60	* 1.75	* 1.75	* 1.50	* 1.50
MARBLE SETTERS	1.43¾	1.25	1.25	1.31¼	1.37½	1.25	1.31¼	.....	.....
MOSAIC & TERRAZZO	1.00	1.25	1.12½	1.12½	1.15-5/8	1.12½	.....	.....	.....
PAINTERS	** 1.37½	** 1.50	** 1.28-4/7	** 1.37½	1.25	** 1.35-5/7	** 1.42-6/7	** 1.50	1.25
PILEDRIVERS	1.47	1.40	1.40	1.50	1.40	1.47	1.40	1.40	.....
PLASTERERS	* 1.66-2/3	* 1.66-2/3	* 1.75	* 1.66-2/3	1.75	* 2.00	* 2.00	* 1.75	* 1.83-1/3
PLASTERERS' HODCARRIERS	* 1.50	* 1.45	* 1.40	* 1.40	* 1.18¾	* 1.35	* 1.75	* 1.40	* 1.50
PLUMBERS	1.52½	1.50	1.53-1/8	1.50	1.56¼	1.62½	1.50	1.50	1.37½
ROOFERS	1.37½	1.37½	1.12½	1.25	1.25	1.37½	1.25	1.25	1.25
SHEET METAL WORKERS	1.37½	1.37½	1.43¾	1.37½	1.50	1.50	1.37½	1.25	1.37½
SPRINKLER FITTERS	1.50	1.37½	.	1.25	. ..	1.62½	.....	1.50	.....
STEAMFITTERS	1.50	1.50	1.53-1/8	1.50	1.56¼	1.62½	1.50	1.50	...
STONESETTERS (Masons)	* 1.50	* 1.75	1.50	* 1.75	* 1.75	* 1.50	1.75	* 1.75	* 1.50
TILESETTERS	1.50	1.37½	1.37½	1.37½	1.37½	1.50	1.50	1.37½	.....

Prepared and compiled by
CENTRAL CALIFORNIA CHAPTER, ASSOCIATED GENERAL CONTRACTORS OF AMERICA
with the assistance and cooperation of secretaries of General Contractors Associations and Builders Exchanges of Northern California.

POST-WAR HOMES WILL REQUIRE NEW CONSTRUCTION METHODS

New construction methods in building post-war homes must be adopted if the lower third income group in this country is to be adequately housed, Robert L. Davison, Director of Research of the John B. Pierce Foundation, said at a conference on "Post-War Housing in America" at the Columbia University Summer Session.

"While those of an income of $3,000 and up represent only 8 per cent of the families of the country, over 50 per cent of the houses built were for this income group," Mr. Davison pointed out. "Those with an income of $1,000 or less, representing 36 per cent of the population, have had only 10 per cent of the houses built for them."

New materials and construction methods on a mass production level would help to cut the cost of housing in half, Mr. Davison declared. This would effect a saving in rent or rent equivalent of 43.3 per cent.

"If, in addition to this reduction in the cost of construction, a reduction rate of 50 per cent in the interest rate would effect a saving of 29 per cent in the rent, or rent equivalent, it might be possible to reduce the cost of rent or rent equivalent by 72 per cent.

"Even if such a utopian situation could be realized the rent or rent equivalent on such a house, if built in a garden city where each family paid its proportion of the community cost, would give a rent or rent equivalent out of reach of half the families in this country.

"I think it is very important for anyone who wishes to understand the housing problem to realize that the community costs alone, even if the house were absolutely free, are greater than the average family can afford to pay for monthly rent. A large proportion of the community service costs are for education. Roughly speaking one may assume that it costs on the average at least $100 per child per year for education. An ideal city or greenblet cannot be developed and operated successfully for those in the low income group unless some method is developed for taking care of these community costs, besides from being assessed against the individual property owner on a family basis.

"In other words, there must be a hidden subsidy or we must develop an entirely new system of levying taxes before it is going to be possible to have garden communities for those of the low income bracket.

"The simple answer to the whole problem is to subsidize housing both by direct subsidy as practiced by the USHA, or by indirect subsidy which generally occurs in cities where factories and office buildings and the more wealthy families contribute through higher taxes to maintain the community services required by the average family. For many years I have been opposed to the subsidy idea, such as practiced by USHA, because of the total volume of subsidy necessary to provide homes for everyone in the country requiring subsidy is so large that I did not consider it would be practical to subsidize on the scale needed.

"Studies I have made indicate that if house and lot were to cost on an average of $5,000 (which is the top figure used by USHA), that to provide houses for everyone on this basis by subsidizing to the point at which they could rent such a home would require fifty-seven billion dollars, and that due to the cost of community services, it would only be practical to build these buildings in districts where there would also be a hidden subsidy to help carry the community services. In other words, as things now stand, new housing for the average man is doubtful. The garden city idea would be still less practical.

"If I were to stop here, I would leave you with a very gloomy picture of post-war housing. However, certain things are happening in this country, particularly in Washington, which make me believe that the post-war period is going to see a good solution to the housing problem for the average man and possibly even those in the lower third income group. To give a true picture of post-war housing, as I see it, I will digress a few minutes into the realm of economic theory, as I believe that a real solution is going to come out of the application of this theory.

"If the savings from returns to capital are invested in new buildings, plants, etc., on a sufficient scale, so that wages from this money invested in so-called capital goods, plus the wages of those making consumer goods, equals the total sales price of all consumer goods, then all that is produced can be consumed and there is no unemployment.

"Probably the basic cause of the '29 depression was the fact that the returns to capital were not being spent either for consumer goods or reinvested in factories, buildings, etc., on sufficient scale to provide purchasing power for what was produced. It is quite obvious that if the purchasing price were there the goods would have been bought and we would not have had a depression with the consequent unemployment.

"Plans are now being prepared in Washington which, if carried out, would, in my opinion, solve this problem. Roughly speaking, and in very over-simplified form, these plans call for maintaining full employment in private industry by providing the financial mechanism whereby savings will be channelled into fields in such a way as to make full employment profitable to industry and investors and the country as a whole.

"One of the most important fields into which idle capital will be directed is the field of rebuilding our country with particular reference to rebuilding the blighted areas of our cities. The magnitude of investment by the government in reclaiming of blighted districts will far exceed anything which has been even considered by subsidized housing agencies, such as

(Turn to Page 45)

The Month's Digest of New Building Products

All of the literature described here is available to architects, engineers, contractors, draftsmen and specification writers upon request direct to the manufacturers.

DRY-DEVELOPED WHITEPRINTS—This booklet is intended to explain quite simply the Ozalid process of making dry-developed, positive-type whiteprints. The text is written in easy-to-read language, language which would interest engineers, draftsmen and architects to the point where they will read the mechanical features of each machine. Write Ozalid Products Division, Johnson City, New York.

WALL PANELS—Marsh Wall Products Co., Inc., has a new leaflet in which they tell of "Marlite WAR-Panels," priced for the wartime market . . . fast, simple installation . . . high heat baked and extremely durable. The leaflet has small sample color panels attached and mentions that supplies are readily available through the company's many branch offices. Write Marsh Wall Products, Inc., 140 12th St., Oakland, Calif.

AIR RAIDS—A combination blackout curtain and glass splintering protective device described in a booklet known as "Blackout, Air Raid Damage and Glass Splinter Protection for Industrial Plants." The device is a heavy, curtain-like blanket, which can be installed in a variety of forms. Write Clinton Carpet Co., Merchandise Mart, Chicago.

LIGHTING—All-out industrial production requires generally from 35 to 75 footcandles of illumination, yet estimates show that the average illumination in this country's industrial plants is only 7½ footcandles, according to the booklet just issued by the Bright Light Reflector Co., Inc., of Brooklyn, N. Y. Brief examination will readily reveal that the booklet has many practical applications of fluorescent and incandescent lighting.

CABINET SHOWERS—This leaflet describes a new line, made by a well known cabinet shower company. Non-critical materials are used, the walls being composed of smooth, hard pressed fibre-board finished with baked synthetic enamel. They are said to be leakproof and sturdy units and are shipped knocked-down. Write to Henry Weis Mfg. Co., Inc., Elkhart, Ind.

PONDEROSA PINE—This new booklet stresses the fact that many morale-building improvements are possible in war-time, and that homes can be made more comfortable and more livable now for today and tomorrow's use. It is known as "The New Open House," contains 32 pages of suggestions and is available from Ponderosa Pine Woodwork, 111 West Washington St., Chicago.

INDUSTRIAL FLOORING—"The Secret of Laying a Heavy Duty Industrial Floor" is a small booklet being used to advantage by engineers and architects. The booklet contains several titled chapters on various phases of industrial flooring. A copy will be sent free to anyone writing Washington Concrete Co., Empire State Building, New York.

SAFETY CLOTH—This is a wide, 10-mesh cotton fabric, whose openings are filled with transparent plastic. It cannot shatter. It may be used alone as a window or may be applied inside the regular window glass to minimize the shattering effect of nearby explosions. It lets in plenty of light and resists weather. It is applied quickly. Literature will be sent by Colloid Equipment Co., Inc., 50 Church St., New York.

WIRING SYSTEMS—This booklet gives complete installation data on porcelain protected knob and tube wiring and is of particular interest to architects, engineers, contractors and others interested in building construction. Write to Porcelain Products, Inc., Findlay, Ohio.

CAREERS FOR YOUNG PEOPLE—This book talks to high school graduates about to enter college and suggests the need for specific training preliminary to entering the building industry or light construction field and points out for the first time in history certain colleges and universities have actually set up curricula with appropriate degrees designed specifically to train young men and women for careers in Light Construction Engineering and Marketing. It is a thought-provoking piece of work, published by and available from Johns-Manville, 22 East 40th Street, New York.

PLASTICS—This booklet was prepared for the use of government offices and war contractors and deals with new and diverse applications for plastics in a wide variety of fields, with special emphasis on the extruded variety. Copies may be obtained by writing to R. D. Werner Co., Inc., 380 Second Ave., New York.

KOROSEAL—This is a synthetic elastic product with many rubber-like qualities and has been made and sold for several years. In order to disseminate technical information concerning it and its uses, the B. F. Goodrich Co., Akron, Ohio, has issued a booklet, replete with pictures and descriptive text and copies are available.

POST WAR HOMES

(Continued from Page 43)

the National Housing Authority.

"Although I earlier said that I do not believe it practical to obtain housing through subsidy, I should like to further clarify this statement by saying that I do think it entirely practical from a political standpoint to have vast expenditures through government credit in order to maintain full employment and, in this respect, housing subsidy is a by-product of maintaining full employment and maximum markets for industry, rather than as a subsidy for a particular class of people.

"One of the plans being worked out in Washington by Hansen and Greer of the Federal Reserve Board, calls for buying of land in blighted areas of this city, clearing the site and then offering this land at a long-term lease at prices which would make it possible for private industry to build and rent within reach of those in the average or lower income brackets.

"Lands so bought may average $3-$4 per square foot and, when leased out, the land rental may be considerably below one per cent a year on the cost of the land. In return for such credit subsidy, the government would require developers to cover only a limited area of the section to be developed, and build to approved standards."

WAR AND THE ENGINEER

The war is the engineer's main business.

That statement epitomizes the program planned for the Society for the Promotion of Engineering Education by Henry T. Heald, president of Illinois Institute of Technology and newly-elected president of the Society. He was elected at the recent annual convention in New York.

"Helping the engineering schools to fit into the war picture, to maintain close contact with the needs of governmental agencies and to translate those needs into actual production, is the main job of the Society and its officers this year—and for the duration," President Heald said.

Three main problems, in addition to its regular program of maintaining a steady flow of competent engineering personnel, face the society in this war era, President Heald said and intimated that the solution of those problems would be the primary aim of this administration.

Those problems are the maintenance of instructional and research standards, full utilization of the engineering schools' facilities and personnel for war research, and the maintenance of defense training on a college level rather than at a trade-school level at engineering schools.

Engineering schools are already beginniing to experience difficulties in maintaining their staffs against the demands for engineers of the armed forces, President Heald said. Although engineering schools consider it a duty to provide the armed forces with some experts from their staffs, the Illinois Tech executive feels that if that trend is carried too far the supply of graduating engineers must inevitably fall off either in numbers or in quality of training—either of which would hamper the war effort.

In regard to the use of facilities for war research, President Heald opined that the fine equipment and personnel of many leading technological schools is still unmarshalled for the war effort. "Engineering college research experts stand ready to devote both their time and facilities to war research," President Heald said.

N. C. STRUCTURAL ENGINEERS

September 1 Dave Elliot, manager of the Goodrich Silvertown Store in San Francisco, addressed the members of the Structural Engineers Association of Northern California, at the Engineers Club, on the timely subject of "The Rubber of Tomorrow." The speaker's answers to questions on synthetic rubber were most informative.

* * *

Promotion for Philip I. Baker, San Francisco member, is announced. Baker is now a Lieutenant-Colonel.

* * *

Gifford M. Randall is in the iron and steel division of the Kaiser Company. A good man to work for these days.

* * *

News from Honolulu brings a favorable report anent the activities of Berkeley's former building inspector, Al Brinckman. Al is assistant area engineer or the U. S. Engineers Corps and according to his superior is doing a good job. Mrs. Brinckman has returned to California.

* * *

H. J. Brunnier and Henry Powers are preparing plans for a $5,000,000 U. S. Quartermaster Depot at Tracy. They also have been commissioned to design U. S. holding and reconsignment buildings at Stockton.

* * *

R. N. Swartz has been promoted to Captain, 133rd Engineers, Fort Lewis, Wash.

* * *

Charles A. Lindgren, Charles J. Lindgren and William H. Popert have volunteered their assistance to help raise $3,120,000 for the San Francisco War Chest, from October 20 to November 18. Live wires all of them.

* * *

Adrian A. Martinez is working on the U. S. Quartermaster's Depot at Tracy.

* * *

Jaro J. Polivka appears in print in the "Engineering News-Record" of June 18th. The article is entitled "Concrete Frames Designed to Save Steel."

* * *

D. C. Willett is now Supervising Structural Engineer, for the state of California at Sacramento.

* * *

George T. McKee is a Captain with the U. S. Army Engineers. Address: 169 So. 13th E. St., Salt Lake City, Utah.

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PUEBLO DEL RIO LANDSCAPING

(Continued from Page 21)

half a fruit tree, but just how it may work out is one of the unanswered questions. There is definite question, in my mind, as to whether the children, or at least the neighbors' children, will allow any fruit to mature on the tree or, so doing, will leave it for the proper tenant to consume. Thus far it is the children that have proven to be the most destructive force with which the project maintenance crew has to deal. Time only will tell.

STANFORD WAR COURSES

Of immediate interest and value to all types of industrial and manufacturing firms in the northern California area are four war courses offered without charge in San Francisco by Stanford University.

The courses are priority and allocation procedures, substitutes for critical and strategic materials, accounting for government contracts, and fire prevention and protection engineering.

The classes are offered by Stanford University to supply a constantly increasing demand for instruction in the changing governmental procedures under wartime administration and emergency measures.

One of the first to open is a 10-week course on priority and allocation procedures which will provide an opportunity for executives, purchasing agents, and priority specialists to secure a well-rounded background on the Regulations and Orders of the priorities system and the procedures involved. Classes are held Tuesday evenings, in Room F of the American Institute of Banking at 58 Sutter street in San Francisco, under the direction of Carroll A. Snyker, priorities and allocation adviser of the war industries committee, San Francisco Chamber of Commerce.

Individuals engaged in fire prevention work, persons in charge of plant protection, engineers, architects, and others will be given training in fire prevention and protection principles in the war course taught by Marshall K. Rouse of the Board of Fire Underwriters of the Pacific, an outstanding authority on the subject. This 16-week class began Monday, August 31, will take up in addition to consideration of all types of fire menaces, the problems of public protection, sabotage, and arson. The location of these weekly class meetings is Room 237, Merchants Exchange Building, 465 California street, San Francisco.

To give information regarding the substitution of available and commercially practical materials for critical and strategic materials now restricted in use, Stanford offers a war course which started Wednesday evening, September 2. Plastics, textiles, protective finishes, chemicals and substitutions of wood for metal, concrete and ceramic products are among the materials to be discussed in the course which will meet weekly for 10 weeks in Room 237 of the Merchants Exchange Building. Two War Production Board members, R. W. Hawksley and Allen White, will teach the course.

Last to begin of the four war courses of particular interest to firms engaged in war work is the accounting for government contracts which has its first weekly meeting on Wednesday, September 30, in Room D of the American Institute of Banking at 58 Sutter Street. The class will familiarize accounting employees of companies with government contracts with the special requirements in connection with accounting for such contracts, including legislation, treasury decisions, types of contracts, taxation and other problems of contracts and sub-contracts. It is a 12-week course.

COLUMBIA STUDENTS TO STUDY CAMOUFLAGE

Training in protective obscurement, deception, and camouflage will be undertaken by the School of Architecture of Columbia University at the suggestion of the Office of Civilian Defense in Washington, it is announced by Dean Leopold Arnaud. Trainees will be instructed in the highly professional skills and problems of concealing vital industrial plants, public buildings, and strategically important rural and urban areas.

"The study of camouflage today is no longer haphazardly approached as it was in the last war," Dean Arnaud pointed out. "At that time lack of careful aerial observation made camouflage more a matter of imagination than scientific precision. The development within the past twenty years of aerial photography and the extensive use of the aeroplane in warfare has made protective obscurement a complex technique, combining the elements of architecture, enginering, and industrial design.

"Protective obscurement for modern purposes is not a problem of making a structure disappear or of blacking it out, but of making it look like something else. This requires a broad scientific and technical background in various fields."

To meet the urgent demand for men and women trained in the various aspects of protective obscurement, the course at Columbia will cover a wide range of subjects, from the principles of vision, to cost estimation of materials, labor, equipment, and overhead.

J. Marshall Miller, instructor in architecture and coordinating officer of the Planning and Housing Division of Columbia University, will direct the work of the program and supervise all laboratory work. He will be assisted by members of the University staff who have followed the Civilian Camouflage Course at Fort Belvoir, Virginia, and by experts drawn from industry, with practical experience in the use of obscurement principles and materials.

Aerial observation, both direct and photographic, and the elements of natural and man-made landscape, will be studied under the direction of Robert A. Smith, manager of the airview department of the Fairchild Aerial Surveys, Inc., of New York.

"TODAY, EVERY FIRE HELPS HITLER"

With this ringing slogan, over 3,000 American communities are now making plans to observe National Fire Prevention Week, October 4-10.

Spurred by an honest will to reduce America's appalling fire loss that annually takes a toll of more than $300,000,000 and ten thousand lives, Fire Prevention Week offers an unusual opportunity to builders, maintenance firms, dealers and suppliers to add to their fall business, and to strengthen the Nation's fire defenses.

One of the prime objectives of Fire Prevention Week, according to the National Fire Protection Association, Boston, Mass., is to repair and fix up those parts of buildings that are needlessly fire hazardous. Today,

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this need is especially urgent, as increased industrial production, lessened manpower, and the threat of sabotage and air attack by fire increase.

The number and type of improvements and repairs that should be encouraged at this time include new coats of exterior paint, new siding, new roofing or roof repairs, new or repaired chimneys and fireplaces. All of these can help reduce the fire-susceptibility of homes, stores, offices and factories.

Mechanical equipment also provides a rich field for repairs and maintenance. Heating, electrical, cooking and water heating equipment should be checked, repaired or, if necessary, and where possible, replaced.

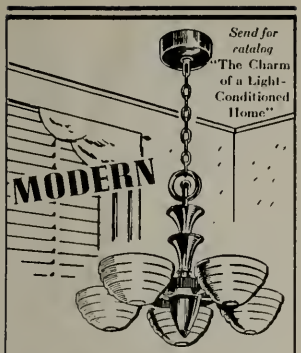
Even heat-proofing is a form of fire protection! Fire records show that the average fire toll rises and falls with the fall and rise of the temperature. In other words, as the thermometer falls, the number of fires increases, due to the forcing of heating systems to handle the increased heating load. This suggests a fire protection campaign for insulation and storm sash; for weather stripping, storm doors; for non-hazardous ash pits, new fuel bins; for carpeted or linoleum-covered floors (which are important means of heat-sealing); and, again, for re-siding and re-roofing, to seal out wind and weather.

Fire Prevention Week also offers an opportunity to press sales of fire-fighting accessories. Depending on availability and priority, such installations and equipment as sprinkler systems, extinguishers, fire pails, fire hose, fire bomb extinguishing equipment, axes, crowbars, masks, helmets and sledges (vital in every industrial fire-fighting set-up), home and group first aid kits, can be encouraged at this time. This suggests also that dealers searching for replacement lines for dwindling hardware and other critical stocks, might find it profitable and useful to investigate the installation of a line of anti-fire, anti-fire bomb and anti-sabotage equipment needed by municipalities and industrial plants everywhere.

Cooperation by dealers and builders with local Fire Prevention Week committees can take several forms. Advertising, both newspaper and direct mail; canvassing; store displays are all effective means. These should be tied onto the local campaign; make use of local slogans and stress local objectives.

Such co-operation should also be backed by voluntary co-operation with the local committee. In past years, some dealers have entered their own floats in local fire prevention parades. Others have given their house-to-house salesmen fire helmets, armbands and other identifying paraphernalia. Others have run contests with free roofing jobs or similar equipment as prizes. The opportunities are legion; imagination and the will to do it are all that are needed.

Fire Prevention Week is not a new American institution, having been observed for many years, during the week of October 9th, the anniversary of the Chicago fire, as pointed out in a Presidential proclamation.



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POST-WAR PLANNING

Some idea of the nation-wide attention being given to post-war planning is gained from a recent report of the Twentieth Fund, New York, which lists and outlines the post-war planning of 112 separate organizations. Various agencies are beginning programs for post-war construction.

The State of New York has authorized creation of a temporary post-war public works planning commission, with an appropriation of $450,000 for preparation of actual plans and specifications. The City of New York has just allocated $21,600,000 for the preparation of plans and specifications for post-war projects estimated to cost $660,000,000. Buffalo is planning post-war public improvements as well as slum redevelopment with private capital. Chicago is calling for preparation of post-war plans for specific areas.

Discussing the "post-war economic climate," Thomas S. Holden, president F. W. Dodge Corporation, points out that England's debt at the end of the Napoleonic Wars was double the national income, giving rise to fears of prolonged depression and impoverishment; instead Great Britain attained and held industrial and commercial leadership of the world for 99 years. Not only are current fears of debt burdens greatly exaggerated, but there should be ample cash purchasing power in the post-war period for accumulated demand for civilian construction, since the people of the country have this year 21 billion dollars in excess of available goods for which to spend it.

Preparing plans and specifications takes time and requires the use of essential product information. It will be too late for immediate post-war building if plans and specifications are not prepared in advance, or, if the product information upon which they must be based is not kept constantly available to post-war project designers during the course of the war.

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BOMB DAMAGE TO INDUSTRIAL PLANTS

Steel frame buildings, and those of reinforced concrete construction, offer the greatest resistance to attack from the air, according to a survey of bomb damage to industrial plants in Britain and other countries reported in "Chemical and Engineering News," publication of the American Chemical Society.

"The type of building construction least likely to suffer from the effects of a bomb explosion is that which is sufficiently resilient to recover its former position without strain or disintegration," says the report, prepared by C. H. S. Tupholme of Farnham, Surrey, England.

"Momentarily, after the explosion, the structure may have to adjust itself rapidly to very unequal air pressures on different parts which may set up strong forces in its various members. Such stresses require proper continuity of reinforcement, or soundly jointed structures, with beams and columns acting as one unit, a feature which is found only in steel frame buildings or in those of reinforced concrete construction.

"In all steel frame and other types of construction the design should be such as to localize the effect of the bomb and minimize progressive structural failure."

Roofs and floors of solid concrete strengthened with filler joists or steel reinforcement give more protection against bombing than floors in which lightness has been obtained by the use of hollow tiles or other means, it was found.

"With floors of the latter type the damage to the plant can be expected to be greater. In single-story buildings of light steel frame or reinforced concrete construction the roofs are not usually designed to be proof against incendiary bombs, and the damage will be of a different character for the bomb will fall directly upon the plant.

"In this type of factory the division of the floor into cells by protective walls designed to localize the effects of bombs or fire is particularly applicable.

"If drainage is not adequate to deal

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with the abnormal conditions during a fire when large quantities of water may have to be conducted away, the consequent flooding is likely to damage plants which have been submerged. Particularly susceptible in this respect are electric motors and electrical equipment generally."

The five main causes of damage to factory plants consequent upon an enemy attack from the air are listed as follows:

"Direct hit from a high-explosive bomb.

"Blast pressure wave from bomb explosion usually accompanied by flying splinters and debris.

"Fire caused directly by incendiary bombs or indirectly by high-explosive bombs.

"Damage from debris falling from above.

"Flooding or drenching by water."

Each of the causes has a different effect on different types of plant, it is pointed out. "All plants can be classified in this respect and limits set within which the damage is likely to fall," the report continues. "For example, a blacksmith's anvil is unlikely to suffer any damage from any of the causes mentioned above except in an extreme set of conditions in which it might be exposed to a direct hit or intense heat.

"Such an item would have a minimum proneness to damage. At the other extreme would be some recording control equipment, such as a thermostat, thermograph, or gas composition recorder, which would be severely damaged by any of the above causes if they were near. The proneness to damage of such equipment would be high."

Factory plants generally, according to the report, can be classified in terms of damage proneness somewhat as follows:

"Heavy all-metal equipment for the heavy engineering industries, in the form of rolling mills, large presses, steam hammers, etc., will have a low damage proneness number, while in light high-speed machines used in cotton weaving and spinning, packaging machines, for tea, margarine, etc., the damage proneness number will have a comparatively high value.

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"The lighter equipment employed in engineering factories, such as lathes, shaping machines, grinding machines, etc., are in average cases likely to suffer damage to parts other than the beds or bases when exposed to blast or fire, and the damage proneness number may be expected to lie between twenty and fifty.

"It may be somewhat higher if the electric motor drive has been exposed to heat or flooding. If efficient dwarf protective walls were provided, the damage proneness number would lie towards the lower limit.

"Intricate machines of lighter construction will need a much greater proportion of the replacement value to be expended in repair, in relation to the proportion of actual damage, because of the high cost of assembly."

BUILDERS' HARDWARE MANUAL

The War Production Board has issued a Builders' Hardware Manual, listing the size, kind and quantity of builders' hardware that may be used in certain types of construction.

The manual, dated July 15, 1942, supersedes builders' hardware specifications previously issued by other Government agencies and comprises a set of maxima for the guidance of architects and builders.

In Directive No. 5, the WPB ordered that the manual apply to construction contracted for by the Army, Navy, or Maritime Commission after October 15, 1942, and by the Reconstruction Finance Corporation, Public Buildings Administration and the National Housing Agency after August 15, 1942.

Priorities for construction of war housing and of other building projects costing more than $50,000 issued after August 3 by the Construction Bureau of WPB will provide that only those items of builders' hardware listed in the manual and used as prescribed therein may be rated by the priority issued.

It is estimated that the manual will make possible a 95 per cent savings in the quantities of non-ferrous metal normally used in the production of builders' hardware for new construction. Another advantage of the manual is that it aids in effecting a concentration of hardware production and in freeing additional plant capacity in this highly tooled industry for the production of war items.

PRIORITIES VIOLATION

Criminal charges were filed recently by the Department of Justice, acting on behalf of the War Production Board, against Waldo V. Tiscornia, Mayor of St. Joseph, Michigan.

In the first action of this nature instigated by WPB, the defendant is charged with violation of the Second War Powers Act, which gives the force of law to all priorities orders and regulations and provides penalties running as high as one year in jail, a $10,000 fine, or both, for violation.

Specifically, the offense charged against Mayor Tiscornia is that he violated the provision of Priorities Regulation No. 1, which requires that any person obtaining delivery of material as a result of a preference rating must use it for the purpose specified in connection with the issuance of the rating.

Facts in the case are as follows:

Last April, Mr. Tiscornia instructed the Auto Specialties Manufacturing Co., of which he is vice-president and manager, to order in its own name approximately $800 worth of cast iron radiators and other heating supplies and to apply to the delivery of this equipment the A-10 rating provided for maintenance and repair material by Preference Rating Order P-100. WPB charges that the equipment was not intended for the permitted purposes of repair and maintenance by the company, but for installation in a new residence then under construction for Mr. Tiscornia's own use.

The materials were delivered under the rating, but information reached WPB's Compliance Branch in time to prevent their installation.

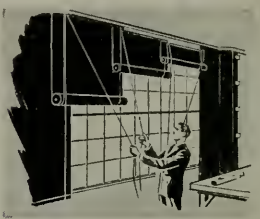
BOOK REVIEW

MILL AND MANSION. A Study of Architecture and Society in Lowell, Massachusetts, 1820-1865. By John Coolidge. Columbia University Press, Morningside Heights, N. Y. Price: $3.75.

This book is a careful, scholarly study of the architecture of a New England cotton-mill town from 1820 to 1865. It illustrates the extent to which building depends upon contemporary social conditions. There is an inter-relationship between architectural evolution and social evolution which deserves much more study than it has ever received.

BLACKOUT BLINDS

Announced recently, and already installed in many Coastal plants and several government buildings, is a new type of blackout blind of the cord type, which raises and lowers



easily, and by a practical method of overlapping is adaptable for windows of any size or number in factories, hospitals, and public buildings. It requires the use of no scarce or more-essential war materials, since it is made of heavy crepe fibre. This material is not only completely light-proof, but will remain so. It will not pinhole. There is nothing to crack or peel off. The blinds are "flame-proofed," which means that they are chemically treated to make them incapable of supporting combustion. Unless immersed in liquid, or after long severe exposure, they will not flame even in direct contact with fire.

These industrial blackout blinds are manufactured by Clopay, 1207 Clopay Square, Cincinnati, Ohio.

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